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Commentary

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Revealed Preference and the Minimum Requirements of Nuclear Deterrence

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Thinking about Peace

Negative Terms versus Positive Outcomes

“Peace is at hand” is a famous quotation from US National Security Advisor Henry Kissinger in October 1972, reflecting his belief that an agreement to end the Vietnam War was imminent. From the Thirty Years’ Peace treaty between Athens and Sparta in 440 BC to the Minsk Protocol between Ukraine, Russia, and two breakaway Ukrainian republics in 2014, so-called “peace” agreements have been used to halt military conflicts. What is common to all these instances is a narrow and negative conception of peace—as the absence of war. Such a definition is common, even dominant, in the way scholars and policy makers think about peace.

In security analyses, *war* and *peace* are usually treated as a dichotomy. Widespread violence in civil conflict has to meet some threshold of severity to be labelled a war; all other situations that fail to exceed that threshold are categorized as peaceful. Prominent works on the decline of war argue that the world is more peaceful largely because of declining violent behavior—often measured in terms of battle deaths.¹ Similarly, US military strategists and government policy makers think primarily in terms of negative peace. The early use of the phrase *operations other than war* reflected military doctrine that lumped together all nonconventional military applications. Its replacement, *stability and support operations*, is more nuanced in its treatment of the “nonwar” category, but the primary emphasis on stability—suppressing violent forces—places priority on negative peace outcomes. Indeed the 2014 US Army Field Manual (FM) 3-07 is titled simply *Stability*. Even in the *Global Peace Index*, created by the Institute for Economics and Peace, virtually every one of the 27 indicators of internal and external peace used to build an aggregate index of peace for every country deals with negative peace; some examples include the homicide rate, access to small arms, military expenditures, and involvement in external conflicts.

Ending violence is certainly a laudable goal, but defining peace in negative terms leads to perverse outcomes for scholarly analysis and policy making. By most definitions, contemporary Iraq is not in a civil war (it falls short in battle deaths and other indicators of military engagement), but it is fallacious to regard the situation there as peaceful,

the outcome of US operations as desirable, or equivalent for analytical purposes to other countries with ethnic and other cleavages such as Canada. Similarly, US relations with North Korea should not be considered as peaceful merely because sustained military engagements have been absent since 1953. What scholars and policy makers need is a broader conception of peace. Why should policy makers care about such an extension? Is this merely an esoteric discourse that hinges on semantical distinctions? A broader conception of peace has dramatic implications for the military and political actions that states might take, especially in postconflict contexts such as Iraq, and if such a stage is ever reached in Syria or Yemen.

The absence of high levels of violent conflict is certainly a component of peace, but should not be considered the only one. There is no consensus on all the other elements of peace, and these might vary by context—state-state relations, national societies, and group interactions to name a few. Nevertheless, features of human rights, justice, and conflict management are commonly cited and move the conceptualization beyond an exclusive focus on violence. Accordingly, peace involves a multiple series of interactions, an ongoing and longer-term relationship rather than an event such as a war. Thus, it needs to be assessed by reference to a wide range of indicators and considerations. In addition, peace is also better understood as a continuum along which relationships vary rather than as a simple binary distinction with war.

How can scholars and policy makers take a broader notion of peace and apply it to real-world cases? Specifically, one can look at war plans and conflictual interactions but also at diplomacy, communication, and functional integration. Based on this idea, a “peace scale” of five ideal type categories emerges along which relationships between states vary: severe rivalry, lesser rivalry, negative peace, warm peace, and security communities respectively.² The two rivalry points (severe and lesser) reflect those states that are enemies to varying degrees and pose the greatest risks for conflict. Contemporary Indian–Pakistani relations and those between France and Germany for much of the late nineteenth and the first half of the twentieth centuries qualify as severe rivalries; note that war is not common or frequent, but the high levels of hostility are constant. Lesser rivalries include current US–Russian relations as well as the US–Nicaraguan relations during the Sandinista regime; enmity

remains strong, but military clashes are much less frequent and sometimes indirect.

Most state relationships fall in the middle category of negative peace (for example, Egypt–Israel after Camp David), in which states are neither close friends nor bitter enemies. Note that unlike the colloquial use of the term, this designation of negative peace does not include the positive peace cases described next and is distinguished from rivalry by more than war proneness.

Two categories of relationships on the positive peace side of the scale are warm peace and security communities. The existence of a shared alliance, such as the North Atlantic Treaty Organization (NATO), alone is insufficient to be classified as either a security community or even warm peace. Indeed, Greece and Turkey are rivals given their militarized confrontations over Cyprus and the Aegean Sea and other hostile interactions. In other instances, the relationships between allies are negative peace because—other than the alliance—there is not much integration or coordination between the two states involved. Positive peace requires more than having a common enemy or some coordination in security policy. Warm peace states have similar foreign policy preferences and highly developed transnational ties but have not created institutions that ensure collective decision making as is the case for security communities. Economic interactions in warm peace are not necessarily facilitated or governed by formal institutions or arrangements as they are in security communities. For security communities, war or violent conflict is not only absent but also unthinkable between members. Thus, warm peace relationships (for example, between the United States and the United Kingdom) differ with security communities more in degree than in kind. Security communities, such as those between numerous European Union pairs of states, also might involve shared identities, values, and meanings. In addition they include extensive cooperative interactions at several levels, private as well as governmental, and common long-term interests.

The Davenport Peace Scale is another example and is more broadly applicable for states, groups, individuals, and other actors.³ This seven-point scale from “opposition” to “mutuality,” with “indifference” as the middle category, tries to capture many different kinds of interactions. Four dimensions place relationships in the seven categories: behavior, organization, language, and values. For example, mutuality involves

integrating and consistent behaviors, inclusive organizations, language that refers to shared identities and common missions, and shared and positive values of community. The Nordic states were for many years the epitome of peaceful societies.

Conceptions of peace do not stop with absence or termination of war. They do not assume disagreements will vanish but rather that conflicts will be comparatively minor and resolved through existing institutions and political processes such that the outcome is regarded as legitimate. These might be democratic institutions (for example, national courts) and procedures within a state or negotiations and common rules between states, such as the World Trade Organization. War or significant violence then is certainly less likely to erupt or resume under such conditions, and in its extreme form such behavior would not even be considered as an option when disagreements arise.

A peace agreement, one that stops the fighting and involves a cease-fire, can be a major accomplishment. Indeed, such negative peace might be a prerequisite for deepening peace between enemies. Yet cease-fires can be very short-lived; during the Bosnian civil war, there were dozens of agreements to halt the fighting—some broken just after the agreements were announced. Even when an agreement goes beyond a simple cease-fire to include provisions for the resolution of outstanding issues, the risks of renewed fighting are great. Indeed, studies have found that over 40 percent of alleged peace settlements in civil wars are broken and war returns. Thus, considering peace as only the absence of war is often only transitory.

Beyond the risk of renewed warfare, negative conceptions of peace have two potentially pernicious effects if they become the centerpiece of strategy. First, there is the tendency to halt peacekeeping, military intervention, and other actions once the fighting has stopped. In effect, national leaders believe all the goals have been achieved, and accordingly, resources and diplomatic attention are devoted elsewhere. This is most famously illustrated by a banner reading “Mission Accomplished” that hung above Pres. George W. Bush in 2003, purportedly signifying that US military efforts in Iraq had achieved a desired end state. A broader notion of peace reframes the mission, including more expansive goals. In an interstate context, these might include, for example, a reduction in arms or troop pullbacks on the Korean peninsula and more importantly greater economic integration there. The first steps toward positive

peace between China and Taiwan are evident in the expansion of trade between the two countries and most recently a meeting between heads of states. Thus, the strategy for preventing war goes beyond military deterrence, and includes more cooperative ventures as well. After civil wars, it might mean nurturing civil society institutions, for example in Afghanistan and elsewhere, and encouraging several actions that promote reconciliation.

Most significant is the necessity to build conflict-management institutions and the societal norms accepting that these are the mechanisms by which disagreements will be resolved. A military force or even peacekeeping mission are not designed for resolving disagreements between actors. At the international level, this means states will negotiate differences and rely on regional organizations such as the European Union or Economic Community of West African States; increasingly these associations, created for economic benefits, contain processes and mechanisms for conflict management. States also have recourse to judicial and quasi-judicial institutions for disagreements such as dispute resolution mechanisms that are part of the Law of the Sea and World Trade Organization. Inside postconflict states, this means creating and reinvigorating rule of law institutions, such as courts and legal codes. The aforementioned FM 3-07 focusing on stability takes several steps in this direction.

Second, the focus on stability as the primary or exclusive goal might undermine any efforts undertaken at peace in the broader sense, even by other actors such as nongovernmental organizations (NGO). Halting the violence can involve suppressing different groups or freezing a status quo that is considered undesirable by some or all parties. Stopping the bloodshed can be a major accomplishment, and it is hard to argue with an outcome that saves lives. Nevertheless, initiating efforts at elections, building civil society, ensuring human rights protection, rebuilding infrastructure, and the like—all elements of peacebuilding—might be compromised by the ways stability was achieved. It is virtually impossible to carry out elections or protect human rights, for example, when there are groups opposed to the military actions that achieved the stability. The catch-22, however, is that it might be equally problematic to carry out those same peacebuilding missions in the absence of stability.

It is one thing to call for greater attempts at deepening peace between enemies; it is another to be successful in those efforts. There are a num-

ber of limitations that make positive peace initiatives difficult, even as the payoffs might be great. The first barrier deals with the means needed for positive peace. Negative peace might come from actions that impose cease-fires or suppress violent activity, largely through military force. The military mechanisms and strategies used by the United States, NATO, or other coalitions are inapplicable to positive peace efforts. Although national militaries have made substantial strides in training and experiences with peacebuilding have provided a number of lessons learned, rebuilding societies requires different sets of skills and activities than are normally provided by military personnel. The net effect is that efforts at positive peace will require coalitions of state agencies, NGOs, and international organizations such as the United Nations (UN). The present ad hoc arrangements are likely insufficient for contexts such as the Congo, and there will be challenges ahead as different actors can have competing interests and operational protocols.

A second concern is that building positive peace is a long-term process that requires extensive and ongoing commitments by the international community. Such long-term efforts do not usually fit into the short-term political windows of democratically elected leaders. When payoffs are distant and diffuse, leaders will be reluctant to make or sustain the kinds of commitments necessary. In addition, democratic and nondemocratic leaders alike also receive little domestic political benefit from programs dedicated to far away countries. Thus, it is not surprising that UN assistance programs, for example, regularly exhibit a gap between the amount of aid that is promised and that which is actually supplied by its members.

Even with the best of efforts by external actors, success is far from guaranteed. Positive peace requires not merely acquiescence from the key players but also active cooperation from the conflicting parties. That is, positive peace is not something external actors can impose. There are some conflicts in which it might be impossible to find common ground among the key actors involved; thus, shared values, visions for the future, and integration might be an elusive quest. In such circumstances, negative peace might be the best outcome that is achievable. The evolution of the Israeli–Palestinian relationship could be headed in that direction. Furthermore, the emergence of the Islamic State of Iraq and the Levant (ISIL) in Iraq and Syria makes it extremely difficult to envision reconciliation, building common institutions, and the like that

include that group. Short of military defeat, it means a “spoiler” exists, and such actors threaten not only progress toward positive peace but also the maintenance of negative peace.

If it becomes an endpoint for inquiry and policy, the focus on negative peace, or the cessation of armed hostilities, is a worthy goal but ultimately misleading and myopic for scholars and policy makers alike. Although the challenges are significant, building a broader conception of peace into strategy is more likely to promote stability in the long run and lessen the need for repeated military actions to impose or sustain stability. For scholars, abandoning conventional conceptions opens a wide range of new research and allows analysts to tackle key questions such as what factors are necessary for the transition from negative peace relationships to positive peace outcomes. ■■■

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Notes

1. Stephen Pinker, *The Better Angels of Our Nature: Why Violence Has Declined* (New York: Viking, 2011); and Joshua Goldstein, *Winning the War on War: The Decline of Armed Conflict Worldwide* (New York: Dutton, 2011).

2. See Gary Goertz, Paul F. Diehl, and Alexandru Balas, *The Puzzle of Peace: Explaining the Rise of Peace in the International System* (Oxford, UK: Oxford University Press, 2016), reviewed in this issue.

3. Christian Davenport, Erik Melander, and Patrick Regan, “The Peace Continuum: What It Is & How to Study It” (unpublished manuscript, 2015).

Red Lines and Green Lights

Iran, Nuclear Arms Control, and Nonproliferation

James H. Lebovic

Abstract

Cold War-era, nuclear-policy debates focused on the US-Soviet nuclear balance and various loopholes and openings in arms-control agreements that arguably favored the Soviets at US expense. Missing from these debates was due attention to the Soviet goals that would determine the significance of alleged force imbalances and treaty allowances. A similar preference for tangible indicators confounds the United States and its allies as they seek proscriptions (red lines) and prescriptions (green lights) for suspect nuclear programs. Initial efforts to thwart an Iranian bomb focused unduly on setting a red line to distinguish acceptable from unacceptable behavior; the debate over the subsequent Joint Comprehensive Plan of Action has focused inordinately on technical issues and far less on critical assumptions about Iranian motives that will determine whether Iran has appropriate incentives to adhere to the agreement.¹



Can the United States and its global partners stop a country from acquiring nuclear weapons? That is the question of the hour for those who seek to forestall an Iranian bomb or worry that *any* new nuclear-weapons state might act irresponsibly, spark a nuclear arms race, or pass nuclear materials to terrorist groups. But what does “stopping” a bomb program actually require? Does it mean freezing nuclear progress—risking that a

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country might break out from an agreement—or even allowing additional nuclear progress under some circumstances? Or, does it require “pushing back the clock” so a government would encounter additional hurdles trying to acquire a bomb at some point in the future?

In applying lessons from strategic nuclear-arms control to the proliferation challenges from today’s potential nuclear states, the answers to the questions above are not found in realist writings in international politics, whether offensive or defensive in orientation. So-called offensive realists argue that states reduce security risks by balancing against the capabilities of others: states prepare for what others can do rather than what they *might* do, since adversary intentions are opaque and variable.² Although defensive realists respond that states can read and shape the intentions of others and thus allay their security fears by sending signals that a “greedy” state would find too costly to send,³ these realists typically imply that capabilities are central to state planning; such capabilities provide information for judging another’s intentions and remain the basis of security planning. Costly signals are largely based on the reduction and reconfiguration of military forces.⁴ However, beliefs about the adversary’s intentions must inform thinking about the requisites of nuclear security because assumptions about motives are critical to threat assessment, an adversary’s capabilities are deficient guides to policy, and nuclear weapons are peculiarly destructive.⁵ In small or large quantities, these weapons fuel uncertainty about their potential aggressive purposes, given options that are ostensibly available to nuclear-armed states.

This article discusses the role of presumed intent in US–Soviet strategic nuclear-arms control. It maintains that US Cold War–era, nuclear-policy debates focused deceptively on imbalances, treaty loopholes, and openings in agreements to cheating when those debates were fundamentally based on opposing beliefs about Soviet goals and tolerance for costs and risks. Absent due attention to these goals, doves and hawks alike were drawn to useful but inadequate metrics that tended to confuse and oversimplify critical issues.⁶ The article concludes that Cold War–era conceptual tendencies beset current US efforts to set red lines to forestall an Iranian bomb and, conversely, to give green lights through agreement to specified Iranian nuclear activities. Policy makers and analysts (henceforth, policy makers) employ metrics that are inevitably deficient and misleading to understand and address policy problems that critically center on Iran’s intent.

Lessons from US–Soviet Strategic Nuclear Arms Control

Knowing whether and when the requirements of nuclear deterrence were met—the points at which US security was reduced, maintained, and enhanced—confounded standard setting against the Soviet nuclear threat. US policy makers attended to key measures of US and Soviet capabilities and treaty loopholes and openings that the Soviets could exploit; they attended less to Soviet motives that determined the stability of any red lines drawn and green lights granted to Soviet nuclear acquisition.⁷

Throughout the Cold War, US doctrine for acquiring, configuring, and deploying nuclear forces evolved with the changing US–Soviet “nuclear balance.” Whereas the Eisenhower administration planned for a one-sided nuclear war that would obliterate the Soviet Union because the latter enjoyed some conventional-force advantages in Europe but little capability to retaliate to a US nuclear offensive in kind, the Johnson administration devised the doctrine of Assured Destruction (AD) because the United States could no longer disarm the Soviet Union in a preemptive strike or satisfactorily limit damage to the United States in a nuclear exchange with the Soviet Union. As articulated in the mid-1960s, the doctrine supposed that deterrence was secure if the United States retained the capability to destroy the Soviet Union—specifically, its cities—under any and all conditions, including a surprise “bolt-from-the-blue” Soviet attack. In the decade to follow, the Carter administration embraced “war-fighting” principles—the assumption that nuclear war, like any war, could be fought to advantage and therefore requires weapons to counter enemy weapons, destroy Soviet war-making capabilities, and hit specific Soviet targets of value (the “countervailing strategy”)—when improving capabilities made selective responses and “counterforce” tactics plausible options. Subsequently, Reagan officials took these principles to require a US capability to “prevail” in nuclear war, in stressing the virtues of an upgraded US offense and the complementary potential of exotic defenses, which the Strategic Defense Initiative promised to deliver.

US policy makers could not agree, then, on a standard for gauging Soviet deployments and behavior and thus whether the Soviets had approached, or crossed, a red line that threatened US security. Drawing from AD principles, US policy doves took comfort in the deterrence potential of the surviving legs of the US triad—the mobility and eva-

siveness of the substantial US bomber and submarine-launched ballistic missile (SLBM) force upon which the United States had come to depend. Drawing from war-fighting principles, US policy hawks insisted, however, that the United States had to push for nuclear advantage to raise the costs to the Soviets of arms competition and war. The facts that the Soviets had deployed land-based missiles at a much higher-than-expected rate through the 1960s and into the 1970s⁸ and were not mimicking US deployments by distributing nuclear weapons evenly among air-, land-, and sea-based legs led hawkish analysts to conclude that the Soviets were seeking superiority and planned—at least in war—to go on the offensive.⁹ Why else would Soviets seem so unconcerned that their land-based missiles were vulnerable to a US counterattack?¹⁰ Some hawks concluded, in fact, that the Soviets sought a “war-winning” capability and that the United States must follow suit.¹¹ In their view, the US land-based missile force was increasingly vulnerable to a Soviet first strike that would effectively disarm the United States. With the decimation of the US land-based intercontinental ballistic missile (ICBM) force, the United States would be left without the counterforce capability to promptly destroy remaining Soviet land-based missiles (that could threaten US cities) in their hardened silos.¹²

Similar disagreements confounded efforts to build (green-light) allowances into strategic nuclear-arms treaties. In consequence, arms-control debates pitted administration officials and supporters who focused on key US benefits against those who highlighted Soviets benefits and opportunities to cheat under one treaty or another. Advocates promoted the 1963 Partial Test Ban Treaty as a stabilizing agreement that would restrict nuclear tests to the underground test environment, slow and potentially halt nuclear proliferation, and build US–Soviet cooperation to facilitate further agreements. Treaty critics claimed, in response, that the Soviets might explore exotic means to cheat—maybe testing weapons in deep-outer space—and would eventually resume atmospheric tests, at an advantage. Whereas the Soviets could supposedly maintain their necessary testing capabilities through edict (given authoritarian Soviet governance), US test capabilities would suffer as scientists moved to greener pastures, resources were invested elsewhere, and laboratories fell into disuse. In the following decade, advocates praised the 1972 Strategic Arms Limitation Talks (SALT) I and 1979 SALT II treaties for imposing ceilings on offensive nuclear

weapons; critics responded that the treaties froze in US disadvantages upon which the Soviets could capitalize further when they formally or effectively renounced the SALT II Treaty. Although the SALT II Treaty capped the number of multiple independently targetable reentry vehicles (MIRV) atop ICBMs, US treaty critics warned that the Soviets could double, maybe triple, the capabilities of their land-based force by exceeding the SALT II limitations that were programmed to expire in the early 1980s. They warned incessantly of the “window of vulnerability” that would open in the early 1980s when the Soviets could target their MIRVs against the considerably smaller number of US land-based missiles. In the final Cold War years, advocates trumpeted the 1987 Intermediate-Range Nuclear Forces (INF) Treaty for banning an entire class of weapons, that is, land-based cruise and ballistic missiles with ranges of between 500 and 5,500 kilometers. Critics feared that—absent a strategic arms reduction treaty—the Soviets would hide, rather than destroy, their intermediate-range missiles or replace them with re-targeted Soviet strategic nuclear missiles, maybe built for that purpose.

To hawkish critics, then, US security was endangered as long as the Soviets acquired “unilateral benefits” under a treaty and retained options for subterfuge. Hawkish analysts presumed the worst of Soviet furtiveness. In the 1980s, they decried the Soviet encryption of telemetry information—electronic transmissions that revealed missile and warhead performance in testing—even questioning whether the Soviets were providing false information on open transmission channels.¹³ They read all Soviet violations of the Anti-Ballistic Missile Treaty (ABMT) as evidence the Soviets were building a nation-wide defense to break out from the ABMT, though Soviet actions were far too limited and the challenge of building an effective missile defense far too great to position the Soviets to thwart a US nuclear offensive,¹⁴ and the United States had also committed treaty violations.¹⁵ The failure to find evidence in obvious places only reinforced hawkish misgivings. It suggested to critics that the Soviets knew what they were doing: they were hiding illicit activities by feeding the misconceptions of the US intelligence community.¹⁶ Treaty proponents begged to differ, of course, but neither set of advocates overcame the issues of the moment to identify the precise requisites of US nuclear security. Nor could they have done so by focusing, as they did, on the physical aspects of the US–Soviet nuclear balance.¹⁷ Their disagreements were actually grounded in diverging assessments of Soviet

objectives and the risks and costs the Soviets would willingly accept to accomplish their goals. Indeed, a fuller examination of Soviet objectives would have exposed the failings of the standards that these advocates readily accepted in evaluating US-force capabilities under various arms-control proposals.

In the name of war fighting, the United States could conceivably have accepted relatively low hardware and damage-infliction requirements given the view of most war-fighting proponents that nuclear wars were “unwinnable” and would end through coercion, not force—that is, with threats to destroy targets of value not the actual destruction of them. Hawkish analysts would most definitely have disagreed, insisting that more, not less, weaponry was required. But these hawks’ standard for sizing and configuring US forces left essential questions unanswered. Why would the Soviets start or provoke a nuclear war given the offsetting costs they would incur, alone, from the collateral effects of US counterforce strikes? Why would the Soviets suppose that their superiority gave them a coercive edge when US policy makers were determined to resist, had thousands of nuclear warheads available for that purpose, were convinced that a nuclear war was unwinnable by *either side*, and were aware that the United States—like the Soviet Union—could always attack the adversary’s cities? Why would the Soviets believe that any limitations were possible in a nuclear conflict? Would not a belief that military advantages are to be had, and limitations were impossible to enforce, provoke the parties to hit first, hard, and often—indeed, hit everything, again and again?¹⁸

Likewise, following AD principles, the United States could conceivably have “destroyed” the Soviet Union—assuredly—by lowering damage “requirements.” These requirements were set in the 1960s by the destruction that US forces *could efficiently inflict* without duly considering what the destruction of the Soviet Union actually meant given Soviet cost tolerance. But AD advocates across the policy spectrum sought options through enhanced US counterforce capabilities—accurate, responsive weapons for destroying Soviet hard targets—to compete quantitatively and qualitatively with Soviet armaments. Even the US Defense Department under Robert McNamara, to whom the doctrine is credited, planned to engage primarily in counterforce strikes against Soviet military targets—that is, to match US against Soviet military capabilities. For some, the hope was to acquire the means to fight the

Soviets on their “own terms;” for others, the hope was to hedge a bit on the AD commitment by acquiring—via these weapons—a prompt, precise signaling capacity should war occur. What was missing, however, in scaling and configuring the US force was more general reflection on the conditions that would precipitate a nuclear conflict, underlying Soviet goals, and how these might affect Soviet responses to US war-fighting tactics.¹⁹ Under any and all conceivable circumstances, the United States had the nuclear capabilities to accomplish realistic objectives and far more capabilities than were necessary to accomplish most any of them, including the destruction of invading Warsaw Pact troops in Europe, the Soviet military infrastructure, and, with time, the residual (unlaunched) Soviet ICBM force.

Despite converging hardware preferences, US policy makers battled relentlessly over the strategic consequences of various nuclear balances and shortcomings in agreements. Potential US disadvantages included a Soviet edge in sheer megatons, missile throw-weight, heavy land-based missiles, and alleged Soviet capabilities to hide mobile-missile stocks, quickly outfit missiles with additional warheads, and provide false information to US intelligence. These debates could not be settled, however, by pointing to treaty safeguards, offsetting US advantages, or US response and retaliatory options. A US consensus was elusive because reconciling diverging positions required a convergence in thinking about Soviet goals and accompanying cost and risk acceptance. Tellingly, existing metrics lost their meaning, and a reconciliation of competing positions occurred, when events provoked hawks to reevaluate their thinking about Soviet goals. The Soviets had convinced US policy makers across the US ideological divide that fears of a Soviet attack were unwarranted by accepting the double-zero formula and onsite inspections of the 1987 INF Treaty and agreeing to reduce their land-based missiles, trim their MIRV potential, and accept intrusive inspections as formalized in 1991 under the Strategic Arms Reduction Treaty. No less importantly, the metrics lost their meaning, though the structure of the Soviet nuclear force had not significantly changed.²⁰

Throughout the Cold War, then, a focus on material considerations distorted logic, despite the great attention to a modest conceptual challenge. In seeking nuclear stability, the United States had a good sense of overall Soviet nuclear capabilities and possessed survivable weapons in numbers and varieties that would confound Soviet efforts to alter the

force balance quickly to achieve a meaningful advantage. By comparison, nuclear nonproliferation efforts have drawn less attention to a relatively large conceptual problem. In combatting proliferation, the United States and its allies must identify proliferators, assess those proliferators' technological progress and likely acquisition levels, and determine how nuclear aspirants might employ their weapons when questions remain about the game-changing capacity of a single nuclear weapon. A proliferator might use one or more weapons coercively, irresponsibly, or accidentally. It could hand a nuclear weapon off to a terrorist group, or it could elevate all of these dangers by provoking additional states to acquire nuclear weapons. Given the resulting intellectual challenges, the temptation endures to neglect underlying intentions and focus, instead, on the material aspects of the challenge.

Halting Nuclear Proliferation: The Case of Iran

As was true in US–Soviet arms control, policy makers draw proscriptions and prescriptions to halt nuclear proliferation *implicitly* from the intentions of the suspect country. Although Iran's intentions inform all debate, even experts obscure the central issues by structuring these red lines and green lights *explicitly* around key metrics.

Drawing Red Lines to Unacceptable Nuclear Activities

The policy debate *appears* to rest on concrete criteria for determining dangerous levels of nuclear progress. Such progress fuels a controversy among nonproliferation experts and concerned policy makers: at what point should a country be considered a significant proliferation threat and, therefore, where should states place red lines that, when crossed, signal a clear and present danger perhaps requiring a forceful military response? The issue of line setting is perplexing, in part, because a country can adhere to the 1968 Nuclear Nonproliferation Treaty (NPT), maintain robust enrichment capabilities, *and* position itself to acquire nuclear weapons once renouncing its NPT obligations. Discussion and debate center on three basic standards.²¹

First, a line can be set at nuclear testing. In this regard, Jacques Hymans argues that the NPT generally embodies the best standard—the performance of a *nuclear test*—for judging whether a country has crossed a critical threshold toward becoming a nuclear-weapons state.²² The test-

ing standard has the advantage of requiring that countries *demonstrate* a nuclear-weapon capability given the regularity with which states have announced their nuclear-weapon programs with tests; the potential for test failures such as those in North Korea; the reality that countries, including Japan and possibly South Korea, acquire fissile-material stockpiles without intending or deciding to go nuclear; the useful warning that a test by a country provides before it stockpiles bombs and makes them deliverable; the uncertainties of judging progress in earlier (pretesting) stages of a nuclear program; and the incentive that earlier thresholds give states to acquire nuclear weapons—since they are presumed “guilty” when crossing those thresholds. Thus, as a consistent feature of nuclear-weapon development and a shiny bright signal, with an undeniable meaning and impact, the explosion of a nuclear device overcomes challenges of perception and uncertainty for parties that must monitor a country’s nuclear progress from a distance.

Many of these arguments hold up to criticism. Although critics argue, for instance, that a state can acquire a nuclear-weapon stockpile, as Israel did, without ever having tested a weapon, the Israeli case might well be unique. As Jacques Hymans and Matthew Gratias conclude, testing is virtually inevitable in a nuclear program: current nuclear aspirants lack the will and capability to duplicate Israel’s “bomb in the basement” strategy of secretly deploying nuclear weapons without ever testing them.²³ Iran, for one, would likely test a device to ensure it works (repetitive testing has been the country’s hallmark in ballistic missile development) and to advertise the country’s nuclear prowess for deterrence benefits. It might do so recognizing that its fragmented government would undercut the broad consensus that makes the strategy work. Critics also maintain that a state can hide the true purposes of a test by claiming that it had peaceful purposes. Backing these claims, the global reaction to India’s 1974 *peaceful* test was notably tame in comparison to the reaction to India’s 1998 *military* test.²⁴ Assertions that a nuclear test is peaceful are likely to remain unpersuasive, however, when made by countries like Iran that have invested heavily in delivery systems and heretofore denied seeking nuclear weapons. Critics maintain, moreover, that a state can move rapidly from a successful test to weapons that might then be hidden or used. Again, the strategy might produce little net gain. After any such test, a country might confront considerable developmental

challenges—in a lengthy process of trial and error—before acquiring a deliverable weapon.

The most compelling retort to the testing standard is that aspirants could gain an edge by acquiring and hiding large amounts of enriched material before a test explosion. Iran could position itself, then, to build a multiple-warhead nuclear arsenal—following the North Korean model—by hiding, shielding, and dispersing its enriched material and bomb-making and delivery capabilities from any military retaliation that a nuclear test would invite. Indeed, Iran could conceivably stockpile uranium, construct a number of less-efficient nuclear devices, and test one to ensure it works. Having dispersed its nuclear materials or devices and acquired a weapon reserve to guard against retaliation, it could proceed then to develop more-efficient warheads. Iran could benefit after a bomb test, from the large array of targets an attacker would have to hit in a preventative strike to set back the country's nuclear-weapon program—as compared to the smaller number of perhaps more vulnerable targets (plutonium-based reactors, uranium-enrichment facilities, and so forth) that could have been hit in the earlier enrichment phase. For that matter, Iran might benefit from a post-test, global hesitancy to attack Iran given residual uncertainty about the actual extent of its nuclear program, its vulnerability to attack, and the strategic implications of targeting *nuclear weapons*.²⁵

Given these limitations, some critics have explicitly and implicitly proposed an alternative threshold: the possession of a significant quantity of fissile material. Israeli Prime Minister Benjamin Netanyahu, in a 2012 United Nations General Assembly speech, set the red line for Iran at the accumulation of medium-enriched uranium sufficient for one bomb. With a significant quantity of material presumably most of the hard work has been done; by comparison, the transition from a significant material quantity to nuclear-weapons status is relatively short, unproblematic, and unobtrusive. The fissile material can be hidden somewhere, for as long as necessary, until it becomes part of a deliverable weapon. Still, critics rightfully ask whether a significant quantity of material is the real issue. After all, some nonnuclear weapon states possess sizable material stockpiles or could acquire them quickly with the necessary infrastructure in place. Although global attention has focused, for example, on Iranian stocks of 20-percent enriched uranium that could, with further enrichment, supply material for a bomb, enlarging these

stocks is no more a proliferation threat than expanding centrifuge capacity for producing low-enriched uranium. The latter could eventually fuel a large nuclear arsenal.²⁶

With the risks and limits of the more technical standards, hawkish critics of US policy have insisted that countries like Iran cross the critical line *early* through actions that impugn their stated peaceful intent, such as reneging on NPT obligations.²⁷ When North Korea withdrew from the NPT in 2003 and Iran suspended its observance of the Additional Protocols (though not legally bound by them) in 2006, the international community was thereby placed on notice that these countries had “bad intent” and would pursue their nuclear options. These critics are inclined then to set lines *somewhere* before the hardening, dispersal, or development of a suspect nuclear program renders it impervious to destruction.

This approach to line drawing fueled the very public US–Israel dispute over the wisdom of attacking Iran—sooner rather than later—to destroy its nuclear infrastructure. Israel set red lines for using force earlier than is warranted from the US perspective. The divergent reasoning of the United States and Israel reflected their relative exposure to an Iranian bomb and the greater vulnerability of the Iranian nuclear infrastructure to a US attack as compared to an Israeli one.²⁸ Israel’s red lines would keep the Iranian program ostensibly within reach of Israel’s destructive capabilities, as Israel lacks the logistical and deep-penetration capacities of the US Air Force—for example refueling and bunker-busting abilities. Israel’s fear, shared by US policy hawks, has been that Iran is playing for time—to take the Iranian program beyond some point of no return—by making false promises and feigning compromise. Although, under Israeli and domestic pressure, the Obama administration responded by pledging that the United States would not tolerate a nuclear Iran, the administration left itself some wiggle room, and Israel ultimately chose to placate its more powerful ally.²⁹ The latter conceded—by default—that an attack on Iran would occur on the US timetable, as dictated by US capabilities and threat assumptions.

Setting the red line around the limits of preventative-strike capability assumes, however, that outside parties can judge the location and vulnerability of key sites when nuclear-weapon programs are hidden from scrutiny. These programs involve activities that “take place in secret on computers, in small shops and labs, and in bunkers and un-

derground, and they may not be revealed until long after the program has been terminated.”³⁰ It could also push these parties to act despite being highly uncertain about the suspect country’s intent given the ambiguity of available information. In the Iranian case, the evidence was sufficient to convince the US intelligence community, as evinced in its 2007 national intelligence estimate, that Iran ceased work in 2003 on its nuclear-weapon program. Indeed, Iran had subsequently allowed the international monitoring of its uranium enrichment facilities and kept enriched uranium amounts below a threshold—even before it agreed to extend the limits and increase transparency in late 2013 under an interim agreement. But observers also had grounds for more dire conclusions. Iran only admitted to constructing enrichment facilities at Natanz and Qom after these sites became known, continued to expand its uranium-enrichment beyond the country’s energy needs, and maintained an active program to develop ICBMs.³¹

Danger exists in overreading the signals in noncooperation.³² Moving against noncooperating states has a significant downside if requiring that the United States and its allies shun rule violators when engaging them instead could reveal options, generate useful information, and overcome misunderstandings.³³ The chances for compromise are hurt when parties view outcomes in zero-sum terms, lock into their positions, and fail to see the conflict from an alternative perspective.³⁴ A lack of informational access can cause outsiders to exaggerate a threat. So it was with the now infamous October 2002 national intelligence estimate, *Iraq’s Continuing Programs for Weapons of Mass Destruction*.³⁵ Used to justify the 2003 war in Iraq, the report expressed the general view within the US intelligence community that Iraq had substantial holdings of weapons of mass destruction (WMD) and was reconstituting its nuclear program.³⁶ Bush administration officials, who ardently believed that Iraq had WMD, reinforced this view. Accordingly, they trumpeted impugning evidence, readily accepted the intelligence agencies’ judgments, and implicitly established a standard of proof that inhibited professionals from challenging the administration’s conclusions.³⁷ Post-mortem assessments established, however, that US intelligence was a captive of the belief that Iraq had not destroyed its illicit weaponry and production capabilities.³⁸

Given differing and ambiguous threshold positions, and the *limitations of all of them*, whether (not just under what conditions) the United States might strike Iran remains an open question. The Obama ad-

ministration's stated red line—not allowing Iran to acquire a “nuclear weapon”—leaves doubt about exactly *when* the United States might act militarily to disrupt a suspect nuclear-weapon program.³⁹ The administration certainly has good reasons to avoid specificity. Risks exist to the line drawer when much remains unknown about the target's intentions and capabilities and the full effects of acting on a threat. Explicitly articulating a red line unintentionally signals to the target that it can snuggle up to the line or leads the target to doubt the line drawer's resolve.⁴⁰ The line drawer places itself in the position of having to act, when challenged, mainly to preserve its credibility.⁴¹ These liabilities were on display when President Obama warned, in August 2012, that the United States would not tolerate the use of chemical weapons by the Syrian government to suppress rebel forces. Although Obama did not specify the amount of chemicals, the level of certainty, and degree of government complicity that would trigger a US response or the timing and nature of the US response, he opened himself to charges that he had undercut US credibility in Syria and beyond by failing to respond forcefully when finally conceding that the Syrian government might have used chemical weapons. The equivocations of the administration in setting a clear red line for the Iranian nuclear program are thus an understandable response to the difficult challenges of deterring and compelling adversaries in international politics. But they also stem from its struggles to respond to a difficult question, “What kind of Iranian nuclear program can the administration accept, and under what conditions?”⁴² The answer rests on assumptions about Iranian intent.

Certainly, relative capabilities inform the red-line debate. While proponents of a precipitous US military strike against Iran's nuclear assets accentuate the dangers of delaying an attack, opponents emphasize the confounding implications of an attack and the incompleteness of the military solution.⁴³ After an attack, Iran might have an even greater incentive, and public backing, to reconstitute its program (an attack will set back a program not end it), seek a nuclear weapon, engage in terrorism, and act aggressively to undermine the attacking countries' regional positions. For that matter, Iran would have even less incentive, after an attack, to open the country to inspections, which would, from their perspective, assist the future targeting of Iran's nuclear and military infrastructure. But capability considerations are only part of threat as-

assessment, and not typically the biggest part given the range over which presumed intentions can vary.

Thus, the essential disagreement among policy makers, and states, is not over the disutility of force or the precise criteria for determining nuclear-threshold status—however critical these criteria might appear. More important to policy makers are the *nature* and *urgency* of the threat—whether, how, when, and against whom a country might use a nuclear weapon. For them, the underlying issue is whether decisive preventative action is required—and sooner rather than later. The specifics of progress fuel debate but remain at most a secondary concern.

Policy makers who doubt that nuclear weapons serve Iran's strategic ambitions (except under dire circumstances, such as deterring an attack) prefer vague, faint, or distant lines based on a belief that Iran has little reason to pursue nuclear weapons. They argue accordingly that Iran has expanded and maintained its regional influence effectively through non-nuclear means, including its support for Hezbollah and other regional militant groups, and has shown little desire for a *direct* military confrontation with Israel, the region's only nuclear power. They argue also that the principal threat to Iran's leadership is internal, not external. Thus, in opting to acquire a bomb, Iran's leaders must accept continuing sanctions that could weaken the leadership's grip on power. Furthermore, Iran will pay a prohibitive price should it target or threaten its powerful adversaries with nuclear weapons. The United States and Israel are unlikely to back down and will certainly retaliate—perhaps with annihilative force—if attacked.

Policy makers who argue that nuclear weapons serve Iran's objectives instead prefer proximate red lines, though these policy makers might argue over exact line placement. Pushing the line back, perhaps far back, are those who believe that nuclear weapons serve more traditional purposes—that is, that nuclear weapons would allow Iran to acquire status by joining the exclusive global club of nuclear-armed countries and to deflect major security threats that include Western-imposed regime change. Moving the line forward, perhaps considerably so, are those who maintain that a nuclear Iran *would* use its weapon(s) to harm the country's adversaries (regardless of the retaliatory consequences) or, at least, to coerce other states and pursue regional aggression with impunity. Unsurprisingly, Israel has shown zero tolerance for any nuclear program in a hostile Middle East country, as demonstrated by its precipitous attacks

on Iraq's Osirak reactor in 1981 and Syria's al-Kibar nuclear facility in 2007 and its hardline position toward the Iranian program. Hard to ignore, from Israel's perspective, is that Iran's leaders have called repeatedly for Israel's destruction and that Iran has strongly supported militants in Lebanon and Gaza and a Syrian regime that have targeted Israel directly.

The point is that important indicators of nuclear progress fuel debate but do not determine the essential positions of policy advocates. Why else has Iran attracted global attention when Japan and South Korea have more developed nuclear infrastructures and, by various metrics, present the greater proliferation threat? For that matter, why were India and Pakistan, despite their alleged nuclear aspirations, allowed to stand outside the proliferation regime, and why, after the Indian nuclear test, did the George W. Bush administration sign a civil-nuclear agreement with India? The answers obviously are that the United States and its allies consider motives when determining which countries deserve exceptional scrutiny and the timing and form of any retaliatory measures. The metrics, in shifting attention from critical assumptions about these motives, can well serve as a distraction.

Giving Green Lights to Nuclear Activities

Nuclear-proliferation experts recognize that restrictions can work in tandem to foreclose the options of potential proliferators, even those that remain determined to maintain a nuclear infrastructure. The solution resides in a diverse range of measures that include limiting uranium stocks and imports of critical technologies; restricting the numbers, sophistication, and configurations of centrifuges and the production and reprocessing of plutonium; continuous monitoring of known nuclear facilities and intrusive inspections of suspect sites; and exchanging relevant information among national intelligence agencies and International Atomic Energy Agency (IAEA) inspectors. For their part, arms-control experts recognize importantly that a verification system can work despite its imperfections. Negotiators need not close every loophole or strive for a fully verifiable agreement. Even a small probability of detection is adequate for enforcing an agreement if the monitored party is risk averse or highly values the benefits of the agreement. Thus, monitoring a portion of the fuel cycle well, or multiple portions less well, can strengthen an agreement by *increasing the chances* of detecting a violation. The odds of detecting noncompliance only improve when interdependencies exist

between a permissible and illicit program that could expose irregularities or diversions of labor, material, and supplies or when any discovered violation can trigger more rigorous or exhaustive inspections or impugn the monitored party's adherence to jeopardize the agreement.

The fact remains, though, that even reputedly exhaustive measures are always incomplete. Although the negotiators focused on the specifics, assessments of the progress and outcome of negotiations with Iran thus required a reading of its current and potential goals.

Negotiating with Iran

Iran's unwillingness to offer meaningful concessions in nuclear talks fueled controversy over their pace and substance. Indeed, Iran largely controlled the negotiations through drawn out bargaining with the EU-3 (France, Germany, and the United Kingdom), the P5+1 (China, France, Russia, the United Kingdom, and the United States; plus Germany), the IAEA, and assorted other countries, including Turkey and Brazil.⁴⁴ The Western powers strove in the mid-2000s for a comprehensive settlement that would constrain Iranian nuclear options, seeking a deal that would end Iranian enrichment and commit Iran to tight safeguards. Iran tried to keep its options open, however, by eschewing specifics, narrowing commitments to particular facilities and points in time, and tying "concessions" to nonnuclear issues.⁴⁵ With the resumption of the P5+1 talks in February 2013, Iran proved unwilling to respond in any detail to Western proposals or to schedule a follow-up meeting when the talks ended without agreement.

Of course, Iran's outward cooperativeness increased considerably when, in mid-2013, Hassan Rouhani assumed the Iranian presidency. By year's end, his outreach to the West, eleventh-hour compromises, and hard bargaining produced an interim agreement (the Joint Plan of Action)—the first respite in the Iranian program since negotiations began a dozen years earlier, a period in which Iran's holdings increased from a couple of hundred to almost 20,000 centrifuges. As a step toward a comprehensive agreement, the six-month deal froze and rolled back critical portions of the Iranian nuclear program. Under the terms of the deal, Iran had to halt the installation of new centrifuges, cap low-grade (5-percent) enriched-uranium production, cease work on a heavy-water reactor, deplete stocks of 20-percent enriched uranium, and accede to

daily inspections of its nuclear facilities. In exchange, Iran received only modest financial concessions: limited reduction of some sanctions and access to some frozen funds.

In pronouncing their country's right to enrich uranium, Iran's negotiators still edged closer to the demands of the country's hard-liners than to the positions of P5+1 negotiators; the latter insisted that Iran significantly reduce its enrichment capabilities, shut down its enrichment facility at Fordow and heavy-water reactor, account for its full range of prior nuclear work, and accede to far-reaching inspections. So, the actual significance of Iran's concessions in the negotiations would remain unclear. As Iran's defenders could note, the Fordow complex was a logical place for an enrichment facility because it was hardened to a preventative attack; an expansive enrichment program would allow Iran to meet "future" nuclear-energy needs; the increased transparency from nuclear inspections should reduce the need for constraints on Iranian enrichment; Iran should not have to compromise its nuclear programs without actual sanctions relief; and so forth.⁴⁶ For that matter, Iran could create doubts about its sincerity in these talks by complying with some, but not all, of the terms of the interim agreement. It required that Iran address the IAEA's concerns over the country's prior nuclear activities, which Tehran had long resisted.⁴⁷

After weeks of arduous bargaining in which Iranian negotiators allegedly withdrew prior concessions and increased their demands, a breakthrough of sorts occurred in early April 2015 with the signing of the Joint Comprehensive Plan of Action (JCPOA), intended as a step toward a more detailed agreement.⁴⁸ The framework's strenuousness exceeded the expectations of many skeptics in requiring that Iran

1. reduce its number of centrifuges from around 19,000 to 6,000 and then limit enrichment activities, for 10 years, to roughly 5,000 older and less-efficient (IR-1) centrifuges operating in a single (the Natanz) facility;
2. reduce its stockpiles of low-enriched uranium from 10,000 to 300 kilograms;
3. forgo uranium enriched beyond the 3.67 percent levels required to fuel a nuclear power plant, for a 15 year period;
4. restrict the hardened Fordow complex to research, involving no fissile material for 15 years;

5. convert the Arak nuclear reactor, to reduce its plutonium production, and forgo plutonium reprocessing;
6. accept far-ranging inspections under the Additional Protocol; and
7. acknowledge the contingency of sanctions relief on Iran's compliance with an agreement.

As always, the devil was in the details, and these were largely unsettled. The parties had agreed on a short, joint text for public release but that each side could separately publicize the agreement's specifics as "fact sheets" without the prior approval of the other. Although some residual ambiguity is typically necessary to overcome differences to forge international agreements (especially involving sensitive, domestic issues), the extent of the discrepancies between the US and Iranian specifics—or, at least, the unwillingness of one or both parties to own up to their concessions—led many critics justifiably to wonder whether the agreement would truly curtail Iranian options.⁴⁹ Even major issues remained unresolved. Iran had not agreed to export its uranium stockpiles or inalterably convert them to prevent their reuse in a bomb program, destroy its unused centrifuges, ban advanced centrifuges (for "research") from the Qom facility, or allow full and permanent access of inspectors to all suspect (including "military") facilities. It also insisted on immediate sanctions relief with the signing of a final agreement and the end to all controls with the expiration of the agreement.

So, the question stood, did Iran's obstructionism amount to inflexibility or, instead, to good (hard) bargaining?⁵⁰ More generally, the question for those negotiating with Iran remained, "Will Iran foreclose its nuclear options?" Answering both questions left the negotiators tying ambiguous evidence to their own assessments of Iranian intent.

The July 2015 Agreement

The basic differences in perspectives and interests proved challenging to overcome. In the ensuing months, old issues resurfaced and new issues emerged. Each side accused the other of backtracking, and deadlines for an agreement came and went. In July 2015, after a week of dashed hopes that a deal was "imminent," the negotiators delivered a detailed agreement that largely built on the April JCPOA. Among its provisions affecting Iran, the agreement

1. retained the framework's limit on centrifuge numbers over a 10-year period (now, with a staggered [8.5-to-15-year] schedule for introducing advanced centrifuges at Natanz, the only permissible enrichment site for the 15-year period);
2. limited low-enriched uranium stocks to 300 kilograms, severely curtailed plutonium generation, and prohibited plutonium reprocessing capacities for the same 15-year period;
3. permitted inspectors access to all suspect sites, with a dispute-arbitration process under the effective control of a Western voting majority;
4. delayed the loosening of sanctions until Iran's initial compliance was confirmed by the IAEA; and
5. outlined a process permitting sanctions to "snap back" into place with evidence or suspicions of Iran's noncompliance.

In return, Iran could challenge inspections of suspect sites and delay access for a matter of weeks; would receive an estimated 100 billion dollars in frozen oil-sale assets; and would have all nuclear-related, multilateral sanctions on the country lifted (likely within a matter of months), along with the embargo on conventional arms within five years and restrictions on Iranian missile-technology acquisition within eight years.

In critical respects, the agreement drew from the advice of nuclear experts who argued that various restrictions could work in tandem to foreclose Iranian options.⁵¹ The negotiators thereby sought the monitoring of Iran's full fuel cycle—mining, uranium conversion, and centrifuge production, operation, and storage—to boost the probability of detecting illicit Iranian activities. Their goal was to lengthen the time Iran requires to accumulate the materials to construct a nuclear weapon. Thus, the P5+1 crafted the JCPOA framework and the July 2015 agreement that followed to give countries a *full-year's warning* before Iran could obtain a nuclear weapon. Presumably, a year gave the P5+1 time to bring Iran into compliance with the agreement through assorted threats and sanctions or to disable or destroy its nuclear infrastructure by force, should Iran race for a bomb. Secretary of State John Kerry testified before the US Senate that increasing US warning time by six to twelve months was "significantly more" than the current window.⁵² Whether Kerry is right or wrong obviously depends on whether these controls

give the United States and its allies additional warning time; breakout time is only “a useful proxy for the obstacles a deal might create for an Iranian sprint to the bomb.”⁵³ But it also depends on whether any additional time improves the US position *significantly* to counter Iranian transgressions. Accordingly, answers to two basic questions informed all readings of the agreement.

First, will Iran simply wait out the agreement expecting that it could acquire a nuclear arsenal in short order once the agreement has expired? A reasoned response requires that analysts assess both Iran’s current and future commitment to obtaining a nuclear weapon and, given an affirmative commitment, Iran’s willingness to postpone acquisition to some point in the future. In making the required judgments, analysts must consider Iran’s openness to the beliefs of hard-liners versus reformers, domestic and strategic conditions that press for and against acquisition in the near and long term, willingness to concede the country’s nuclear ambitions to obtain resources to pursue other military or subversive political goals, and acceptance of the risks of conducting research and constructing facilities in secret. Definitive judgments in these regards are elusive, of course, which left policy makers and skilled analysts alike to rely on rather general assumptions about Iran’s objectives.

Proponents of the agreement maintain, then, that a 15-year sunset provision provides considerable room for Western cooperation with Iran to grow and that the risks to Iran from endangering the agreement override any temptation to cheat. In this view, Iran had made the costly commitment of conceding the country’s nuclear prerogatives by agreeing to very stringent terms that would essentially cut off all pathways to a bomb for a full decade and a half. During that period, Iran might reform under pressure from a growing middle class (strengthened by economic growth), acquire good cooperative habits, and receive ever-greater economic and political incentives, through ongoing relationships, to build bridges to the West.

In turn, the agreement’s critics fear that Iran made short-term concessions to realize the country’s long-term goal of acquiring a nuclear weapon. That is, Iran might prepare, through ongoing research, development, and accumulation of wealth, to rush for a bomb as the agreement expires. After 15 years, Iran would be free to increase and expand its nuclear enrichment capabilities without restriction. Under the deal, Iran’s program “will be treated in the same manner as that of any other

non-nuclear-weapon state party to the NPT,” as stated in the Agreement’s Preamble and General Provisions.⁵⁴ Critics asked why a stronger Iran (now, a “nuclear threshold state”) would presumably be a more compliant Iran.

The second question informing all readings of the agreement is will Iran violate the terms of the deal? In other words, will Iran incur the costs of a breakout from the agreement with a transparent push for a bomb, or seek, alternatively, to minimize the risk of premature exposure by conducting necessary research, developing relevant technologies, and enriching uranium in secret facilities? A reasoned response requires analysts to judge Iran’s risk propensities under the agreement, again by considering Iran’s goals.

Proponents conclude, accordingly, that Iran is unlikely to test the will of Western countries by engaging in prohibited nuclear activities when the chances of detection are high. Iran carries the burden of providing access and information to allay Western suspicions, and any one party to the agreement can take its concerns to the UN Security Council where a consensus is required to *block* the automatic reimposition of sanctions within a matter of weeks. Knowledgeable proponents argue further that the possession of a significant quantity of fissile material is but a single step toward a survivable nuclear arsenal. Thus, by violating the nuclear deal, Iran invites potentially high political and economic costs without compensatory gains in security. Proponents maintain, then, that a cautious Iran will concede its nuclear prerogatives to come out from under the threat of sanctions or military attack.

In contrast, US policy hawks oppose any agreement that provides less-than-complete transparency and allows Iran latitude to pursue its nuclear ambitions. If Iran’s technological knowledge and capabilities can improve over time, *increasing* vigilance is also necessary—backed by a credible threat to impose costs on Iran for any lack of transparency. Critics worry, in fact, that Iran will repeatedly block inspections by insisting that “credible evidence” of violations is lacking or delay access to suspect sites for a number of weeks (in the name of “managed access”) to hide incriminating evidence.⁵⁵ Through obstruction and deceit, Iran will position itself to pursue a bomb before the agreement has expired. The opportunity to do so actually increases at the mid- to far-end of the agreement’s lifespan, as the time that Iran needs to acquire the nuclear material to build a bomb collapses under the terms of the deal.

Iran might bet, then, that it can eventually violate the agreement without cost due to favorable political conditions. Foreign leaders will remember the arduous negotiations that led to the July 2015 agreement and seek not to reopen old debates, fearing that Iran will renounce all constraints on its nuclear program (the *nuclear* “snapback” option). Experts will disagree over whether the incriminating evidence is convincing, Iran’s actions reflect “legitimate” alternative interpretations of the agreement, or the potential developments bring Iran meaningfully closer to a bomb.⁵⁶ Military and intelligence officials will maintain that a US attack on the Iranian nuclear infrastructure can only damage known facilities and setback—not stop—an Iranian nuclear program. US allies will argue that a significant quantity of nuclear material is different from a weapon in hand. Regional experts will urge caution, warning that attacking Iranian facilities will provoke a regional (maybe global) conflict and will weaken the position of Iranian moderates who could impede Iran’s march toward a bomb. Finally, commentators throughout the world will proffer that countries that acquire nuclear weapons can still be deterred and have strong reasons to act responsibly.

Iran could benefit further if it had planned a breakout from an agreement to catch foreign opponents flatfooted, that is, when sanctions have ended, the counterproliferation coalition has splintered or eroded, and the military option has lost viability with the hiding, hardening, or dispersion of Iranian nuclear assets. The risks to Iran at that point are potentially small. Iran might sprint toward the finish line expecting countries to accept one more nuclear-armed state, as they had a nuclear-armed North Korea. In time, the United States and its allies might well accommodate the “new reality” rather than sacrifice trade and investment opportunities or accept the risks of forcefully resolving the dispute. Iran has reason to expect a favorable resolution. By pursuing a one-year window to respond to Iran’s violations, the United States implicitly conveys its own uncertainty about its willingness to act and ability to build a supportive international coalition. After all, the United States does not require a full year to pre-position US forces in the region to attack known Iranian nuclear facilities and requires considerably more time for new sanctions to work.

Supporters of the July 2015 agreement insist, however, that intentions are beside the point. They are arguably correct if any agreement with Iran is the *best* that the P5+1 could achieve under the circumstances and

better for the P5+1 than no agreement. Therefore, they maintain that, with an agreement, controls and checks on the Iranian nuclear program will increase. Indeed, the US capability to damage the Iranian nuclear infrastructure will only improve under the agreement with the information that is obtained from monitoring critical sites, the reduced size of the Iranian program, and the program's concentration in a smaller number of facilities.⁵⁷ They further maintain that, without an agreement, the sanctioning regime will fracture, the transparency of the Iranian nuclear program will dramatically decline, and the military option will remain as the sole—bad—alternative. These very conditions, according to President Obama, left the US Congress with no viable reasons to oppose the agreement.

Supporters and opponents undoubtedly say what they must to sell or to kill the deal. One prominent opponent, former ambassador Eric Edelman, noted accurately that the Obama administration once deflected criticism with the mantra, “a bad deal was worse than no deal,” yet defended the final agreement by suggesting that “this deal, whatever its flaws is better than no deal and the only alternative is war.”⁵⁸ Others argued that, should Iran violate the deal, UN sanctions will fully snap back into place, while insisting nonetheless that states will ignore these same sanctions should the United States reject the agreement.⁵⁹ In turn, critics who once insisted that “sanctions would not work” now championed the retention of sanctions to get a “better deal.” They also challenged the agreement by implying that the alternative was a better deal, not—perhaps—*no* deal, which could leave the world without a window on the Iranian program or control over its direction.

Salesmanship aside, even reasoned judgments about whether the agreement is the best “that we can do” derive in no small part from assessments of Iranian intent. Supporters must consider what Iran will ultimately concede to get a deal, whether Iran will abide by the terms of the agreement or violate it brazenly or artfully to thwart the reimposition of sanctions or a preventative military strike, how Iran will respond to the renunciation of the agreement or a military strike, and whether Iran will build the infrastructure to rush for a bomb from a stronger strategic position at the far-end of the agreement. In point of fact, US policy makers have grounds to reject the JCPOA if concluding that Iran will effectively violate the deal at some moment of strategic advantage and that the agreement could breed complacency, an overriding commitment to

making the deal “work,” or a desire to avoid confrontation at all costs by those who are charged with holding Iran accountable. To avoid that trap, the United States could renounce the agreement, press for further concessions, exert economic pressure on Iran, and try—through various means—to impede its nuclear progress. Should the United States stand alone, its disruptive influence and potential might give US allies and the business community pause in their dealings with Iran and provide Iran reason to placate the foreign opposition by holding, at some level, to the terms of the agreement.

The implications of these various arguments are simple—and perhaps disconcerting. Like it or not, the agreement comes with risk, and the risk grows or recedes with assumptions about Iranian goals. Obviously, stringent constraints on Iranian nuclear prerogatives are preferable to lax constraints. Tighter constraints can only increase the risks to Iran should it try to violate the terms of the agreement. But support for a nuclear deal within US policy circles is far more sensitive to assumptions about the intentions of Iran than to its opportunities to reap gains, illicit or otherwise, from the agreement. Assumptions about these goals, as shaped and charged for political effect, will determine whether an agreement’s presumed benefits are worth the costs.

Critics have certainly tried to scuttle the agreement by focusing on its laxities. They suggest, for example, that Iran will exploit any openings to advantage, that these openings constitute *prima facie* evidence of Iran’s bad faith in the negotiations, and that Iran’s prior compliance with agreements surely indicates that negotiations work to Iran’s favor. Focused thusly, critics make two incompatible assumptions about Iranian objectives. When challenging the agreement’s safeguards, critics assume that Iran will pursue nuclear weapons with urgency; it will secretly or blatantly cheat on the agreement because these weapons serve the country’s coercive or destructive goals. Conversely, when excoriating the agreement’s effective expiration date, critics suggest that Iran will postpone nuclear-weapon acquisition to some point in the future. By then, the sanctions regime will have eroded, Iran’s economy will have improved, Iran’s nuclear infrastructure will have matured (as it introduces new centrifuge models and reaps benefits from permissible research and development), and the onerous constraints of the agreement will have loosened. Taken together, these assumptions present a logical conundrum.⁶⁰ An Iran that is plotting to acquire nuclear weapons in

secret will act with haste and take high risks and presumably seek one or more nuclear weapons for their inherent game-changing potential. An Iran that is plotting a long-term nuclear challenge to Western interests is presumably postponing—maybe, compromising—its nuclear aspirations in deference to cost. At the very least, such an Iran seems unlikely to exploit all potential avenues to acquire a bomb, let alone use it to harm the United States, Israel, or any other country simply *because it can*. Rather than refining their positions, however, critics resort to grand assumptions. For instance, an open letter to Congress from 200 retired US general and admirals recounts the litany of short- and long-term failures of the nuclear deal and concludes, with insufficient support, that the “agreement will enable Iran to become far more dangerous, render the Mideast still more unstable and introduce new threats to American interests as well as our allies.”⁶¹

In making their case, supporters of the agreement construct a wobbly edifice of their own. In emphasizing the challenges confronting Iran should it secretly pursue a bomb, they focus on near-term treaty safeguards that permit a one-year warning period. Supporters thereby answer critics who argue that Iran will relentlessly pursue its nuclear objectives through all available means. They do so, however, only by deemphasizing long-term risk. Supporters note correctly that *some* safeguards will continue for two decades and beyond and that Iran committed to additional long-term monitoring of its nuclear program by agreeing to *seek* ratification of the NPT Additional Protocol under the agreement.⁶² Still, negotiators would most definitely have rejected these more limited long-term restrictions had they been proposed as sole, near-term constraints on the Iranian program. What will have changed during the duration of the agreement to justify relaxing the restrictions? If the unprecedented short-term constraints are required because Iran might accept great risks and costs to acquire a bomb, does not that preclude weakening these constraints at the far-end of the agreement?

Supporters offer answers that beg for further development. Some advocates inside and outside the Obama administration pin their hopes for the coming years on Iran’s willingness to reform and opt for cooperation with the West.⁶³ One nuclear-proliferation expert concluded, for example, that “the JCPOA provides a solid formula for blocking Iran’s ability to build nuclear weapons for at least 15 years, and the time necessary to pursue and implement complementary initiatives to head

off the possibility that Iran will try to pursue an expansion of its nuclear program over the long-term.”⁶⁴ But why should Iran’s leaders moderate their goals as they become increasingly realizable? If they “have been on a superhighway, for the last 10 years, to create a nuclear weapon or a nuclear weapons program, with no speed limit,” as former Secretary of State Colin Powell put it in praising the “remarkable” short-term restrictions of the agreement, why would they not just hit the gas when these restrictions are lifting?⁶⁵

Elsewise, supporters focus on the safeguards entirely and suggest that Iran’s goals are irrelevant. Indeed, three dozen former admirals and generals, who supported the Iran deal, signed an open letter to Congress that highlighted the deal’s ability to block “the potential pathways to a nuclear bomb” and strictures for “intrusive verification” yet simply rejected insinuations, also without sufficient backing, that the agreement was “based on trust.”⁶⁶ As a result, supporters downplay two plausible scenarios. Iran might seek to weaken US resolve and capability to confront Iranian transgressions, at home in its nuclear program and abroad by playing to widespread desires to preserve the nuclear arrangement or, instead, Iran might simply wait out the agreement and push for a bomb once the deal has expired. Thus, opponents and supporters have heatedly duelled over laxities and safeguards in the agreement. Despite the tenor and substance of the debate, both sides rely on their assumptions about what Iran will likely do in the near- and long-term future.

Final Thoughts

The Cold War ended, but its pattern of reasoning remains. Then as now, policy makers defended their agreements by arguing that they have everything to do with restrictions and verification and nothing to do with trust. But they actually have *everything* to do with trust when understood to mean that another, from a reading of its intent, will not act as it is capable.⁶⁷ Even those who believe the agreement controversy is an unnecessary distraction—that deterrence would ultimately stop a nuclear-armed Iran from achieving aggressive goals—*trust* that Iran will not willingly accept the costs of aggression.

Of course, intentions provide a deficient basis for national-security policy making. Intentions are opaque and variable, as many realists are quick to note. Realists are wrong, however, when they insist that the vi-

able alternative to considering intentions is to ignore them and to rely, instead, on the worst-case assumption that others act as they are capable. Mutual agreement is impossible under these conditions—for no agreement is ironclad or exempt from interpretation. The critical issue is whether laxities *or* safeguards matter given a party's incentives to exploit or adhere to the terms of the agreement. **SSQ**

Notes

1. A draft of this article was presented at the annual joint conference of the International Security Studies Section of the International Studies Association and the International Security and Arms Control Section of the American Political Science Association, November 2014, Austin, Texas. I wish to thank the panel participants as well as Caitlin Talmadge, Jacques Hymans, Matthew Grattias, and the *Strategic Studies Quarterly* editor, Mike Guillot, and reviewers for their helpful comments on earlier versions.

2. John Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2001).

3. Charles L. Glaser, "The Security Dilemma Revisited," *World Politics* 50, no. 1 (October 1997): 171–201.

4. These signals include some level of demobilization or disarmament, designing forces for territorial defense, and preparing only to punish not to defeat aggressors. In this sense, this article accepts Glaser's own characterization of defensive realist arguments in recognizing that assumptions about motives are influenced by information of diverse origins. See Charles L. Glaser, *Rational Theory of International Politics: The Logic of Competition and Cooperation* (Princeton, NJ: Princeton University, 2010).

5. This article does accept two key premises of the realist security dilemma. First, the capabilities of other states inform assessment of threat, and second, the "offensive" actions are not clearly apparent as such. On the importance of intentions to threat assessment, see Stephen Walt, *The Origins of Alliances* (Ithaca, NY: Cornell University Press, 1987). On beliefs and behavior, see Robert Jervis, *Perception and Misperception in International Politics* (Princeton, NJ: Princeton University Press, 1976); Yuen Foong Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965* (Princeton, NJ: Princeton University Press, 1992); Elizabeth N. Saunders, "Transformative Choices: Leaders and the Origins of Intervention Strategy," *International Security* 34, no. 2 (Fall 2009): 119–61; and Keren Yarhi-Milo, "In the Eye of the Beholder: How Leaders and Intelligence Communities Assess the Intentions of Adversaries," *International Security* 38, no. 1 (Summer 2013): 7–51.

6. For a detailed discussion of these deficiencies, see James H. Lebovic, *Flawed Logics: Strategic Nuclear Arms Control from Truman to Obama* (Baltimore, MD: Johns Hopkins University Press, 2013).

7. On the challenges of inferring Soviet motives, see Richard K. Herrmann, *Perceptions and Behavior in Soviet Foreign Policy* (Pittsburgh, PA: University of Pittsburgh, 1985).

8. Albert Wohlstetter, "Is There a Strategic Arms Race?" *Foreign Policy* 15 (Summer 1974): 3–20 and "Is There a Strategic Arms Race? (II): Rivals but No 'Race,'" *Foreign Policy* 16 (Autumn 1974): 48–92.

9. Richard Pipes, "Militarism and the Soviet State," *Daedalus* 109, no. 4 (Fall 1980): 1–12.

10. Both conclusions became mainstays of US National Intelligence Estimates of Soviet strategic capabilities until the Cold War's end. On the exaggeration of the Soviet threat, see Joshua Rovner, *Fixing the Facts: National Security and the Politics of Intelligence* (Ithaca, NY: Cornell University Press, 2011), 89–136.

11. Colin S. Gray and Keith Payne, "Victory Is Possible," *Foreign Policy* 39 (Summer 1980): 14–27.

12. Bombers and submarine-launched ballistic missiles were reputedly not up to the task throughout much of the Cold War.

13. They thus defied dovish claims that the Soviets had only to provide the United States with *necessary* data for verifying Soviet treaty compliance under the terms of the SALT II Treaty and that the Soviets themselves lacked unfettered access to US telemetry, which the US military was loath to provide.

14. Suspect actions involved the construction of a phased-array radar facility that was not located on the Soviet border facing outward and the use of radar at Soviet missile test facilities simultaneous with tests of antiballistic missiles.

15. On the compliance disputes, see James A. Schear, "Arms Control Treaty Compliance: Buildup to a Breakdown," *International Security* 10, no. 2 (Fall 1985): 141–82.

16. Amrom H. Katz, *Verification and SALT: The State of the Art and the Art of the State* (Washington, DC: Heritage Foundation, 1979).

17. Likewise, US policy analysts focused on operational issues, including the relative levels of damage incurred in one scenario or another, the launch options for safeguarding US counterforce capabilities, the soft- versus hard-target capabilities of bombers and submarine-launched ballistic missiles (SLBM), and the mechanics of signaling (resolve and restraint) in the course of nuclear conflict.

18. Any such limitations would seem improbable once dual-nature civilian-military targets, including the Soviet leadership and government, had been struck; millions of Soviet citizens had been killed; Soviet command, control, communications, and intelligence networks had disintegrated; and Soviet leaders were now disinclined to believe the "best" of US intentions and inclined to guard against the "worst." For an excellent critique of Cold War-era, US nuclear strategy, see Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithaca, NY: Cornell University Press, 1985).

19. Various alternative doctrinal standards vied with Assured Destruction but came no closer to settling whether and when US security was endangered by failing to offset Soviet nuclear "advantages." The Nixon administration professed to have an answer when it sought to scale US forces to meet two interrelated standards. The first of these was *sufficiency*, which meant that, under the worst of circumstances, the United States would retain retaliatory capability in amounts that could deter the Soviets from initiating an attack. The second of these concepts was *essential equivalence*, which meant that the United States need not match Soviet weapons in numbers and varieties as long as the United States was not left with aggregate inferiority. Despite misgivings about Assured Destruction (AD) principles, the administration had not proposed a useful substitute that could guide US arms-control positions. The question of how much *relative* capability was enough for sufficiency was a difficult variant of its absolute (AD) counterpart. US policy makers were left no closer, then, to establishing definitively whether US security was secure or threatened at current US–Soviet force levels.

20. The Soviets retained a hypothetical capability under the 1991 Strategic Arms Reduction Treaty to destroy the US land-based force in a first strike. The agreement permitted Soviet land-based, MIRVed missiles—including heavy SS-18 missiles with their vast multiple-war

head potential—in ratios to US land-based missiles that officials in the Reagan administration once found threatening.

21. The academic literature tends to focus instead on prerequisites for nuclear self-sufficiency. For that purpose, it relies on proxies for essential program requirements, opting for measures that are easily monitored using available data. See Dong-Joon Jo and Erik Gartzke, “Determinants of Nuclear Weapons Proliferation,” *Journal of Conflict Resolution* 51, no. 1 (February 2007): 167–94; and Stephen M. Meyer, *The Dynamics of Nuclear Proliferation* (Chicago, IL: University of Chicago Press, 1984). For a good critique, see Scott D. Sagan, “Nuclear Latency and Nuclear Proliferation,” in *Forecasting Nuclear Proliferation in the 21st Century*, vol. 1: *The Role of Theory*, ed. William C. Potter and Gaukhar Mukhatzhanova (Stanford, CA: Stanford University Press, 2010).

22. Jacques E. C. Hymans, “When Does a State Become a ‘Nuclear Weapons State’?: An Exercise in Measurement Validation,” in *Forecasting Nuclear Proliferation in the 21st Century*, vol. 1: *The Role of Theory*, ed. William C. Potter and Gaukhar Mukhatzhanova (Stanford, CA: Stanford University Press, 2010).

23. Jacques E. C. Hymans and Matthew Gratias, “Iran and the Nuclear Threshold: Where Is the Line?” *Nonproliferation Review* 20, no. 1 (2013): 13–38.

24. For insights on this position, see Hymans, “When Does a State Become.”

25. Admittedly, *none* of the responses above to the testing standard are easily dismissed, for each could carry weight under the right circumstances. After all, Israel *did* acquire nuclear weapons without testing; and even crude, cumbersome nuclear devices are potentially deliverable and useful for *some* purposes.

26. Indeed, using a bomb’s worth of 20-percent enriched uranium as a standard presumes that Iran would rush for a *single* bomb and would do so without knowing how much of that uranium it would actually need for a device—lacking relevant experience in uranium processing. On this, see Dan Williams, “Analysis: Obama Won’t Trip over Netanyahu’s Iran ‘Red Line,’” *Reuters*, 15 March 2013, <http://www.reuters.com/article/2013/03/15/usaisraelobamairanidUSBRE92E06Q20130315>.

27. Full participation requires adherence to the Comprehensive Safeguards Agreements for verifying the accuracy of country reporting and the Additional Protocols for verifying the completeness of reporting—the latter, by granting the IAEA access to undeclared sites to conduct inspections and sampling and by providing the agency with requested documentation. On the Protocols, see Mark Hibbs, “The Unspectacular Future of the IAEA Additional Protocol. Proliferation Analysis,” Carnegie Endowment for International Peace (web site), 26 April 2012, <http://carnegieendowment.org/2012/04/26/unspectacularfutureofiaeaadditionalprotocol>.

28. Proximity and capabilities alone can explain Israel’s 1981 attack on Iraq’s Osirak reactor and 2007 attack on a suspected Syrian nuclear reactor.

29. In this, the administration was arguably responding to Israel’s manipulation of US domestic politics. Israel’s incentive was to use all available political leverage, including public pressure upon the administration (before the close 2012 US presidential election) and a threat of immediate, unilateral military action, to get the United States to attack Iran—and, falling short, to get the United States to commit to attack after Israel’s unilateral window of military opportunity had closed. Essentially, Israel tried to solve a “commitment problem” by getting the Obama administration to announce publicly—and, therefore, presumably irrevocably—to strike Iranian nuclear facilities when the United States sought instead to keep its options open. Having staked a public position, the administration presumably could not easily back down with subsequent evidence that Iran’s nuclear program had progressed. On “audience

costs," see James D. Fearon, "Domestic Political Audiences and the Escalation of International Disputes," *American Political Science Review* 88, no. 3 (September 1994): 577–92.

30. Harald Müller and Andreas Schmidt, "The Little-Known Story of Deproliferation: Why States Give Up Nuclear Weapons Activities" in *Forecasting Nuclear Proliferation in the 21st Century*, vol. 1: *The Role of Theory*, ed. William C. Potter and Gaukhar Mukhatzhanova (Stanford, CA: Stanford University Press, 2010), 132. The extent of these activities in a country can remain unknown even to its leaders so that their words and behavior are potentially misleading. Saddam Hussein was constantly misinformed about the actual state of Iraqi capabilities by subordinates who feared for their personal safety. See Kevin Woods, James Lacey, and Williamson Murray, "Saddam's Delusions: The View from the Inside," *Foreign Affairs* 85, no. 3 (May–June 2006): 2–26.

31. Matthew Kroenig, *A Time to Attack: The Looming Iranian Nuclear Threat* (New York: Palgrave Macmillan, 2014), 34–37. In consequence, Iran's nuclear progress would remain open to dispute. When Iran announced to UN officials in January 2013 that it would install advanced (IR-2M) centrifuges at the Natanz installation, increasing the speed with which the country could acquire material for a bomb, outside analysts could still find reason for optimism: Iran would have difficulty under sanctions acquiring materials to construct these centrifuges, had slowed the growth of its uranium stockpile, and had not announced plans to introduce the centrifuges at the less-vulnerable Fordow facility, near the city of Qom. Likewise, with the disclosure of Iran's efforts in late 2011 to procure from China 100,000 ring-shaped magnets, which could support a quintupling of (IR-1) centrifuge numbers, observers still had reason to believe that Iran was not any closer to acquiring a weapon. Iran converted some uranium into metallic form and kept its holdings of medium-enriched uranium below levels that were necessary to construct a bomb. Joby Warrick, "Iran to Enrich More Uranium," *Washington Post*, 1 February 2013, A8; and "Iran Sought Banned Magnets," *Washington Post*, 14 February 2013, A1.

32. Robert Jervis, *Perception and Misperception in International Politics*; and Robert Jervis, "Deterrence and Perception," *International Security* 7, no. 3 (Winter 1982/83): 3–30.

33. On this point, it must be said that many dozens of states have refused to accept the NPT Additional Protocols to avoid burdensome reporting and administrative requirements and protest the failure of nuclear-weapon states to disarm.

34. On decisional maladies, see Jervis, "Deterrence and Perception;" and Robert Jervis, Richard Ned Lebow, and Janice Stein, *Psychology and Deterrence* (Baltimore, MD: Johns Hopkins University, 1989). Put differently, the problem for a coercing party is that its compellence demands increase a target's deterrence concerns. See Richard N. Lebow and Janice G. Stein, "Deterrence: The Elusive Dependent Variable," *World Politics* 42, no. 3 (April 1990): 353–56.

35. The key judgments of the estimate are available at National Security Archive: National Intelligence Council, *Iraq's Continuing Programs for Weapons of Mass Destruction* (Washington, DC: National Foreign Intelligence Board, 2002), <http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB80/wmd15.pdf>.

36. It reached this conclusion despite the conclusion by the International Atomic Energy Commission, based on its inspections through 1999, that there was "no indication that Iraq possesses nuclear weapons or any meaningful amounts of weapon-usable nuclear material, or that Iraq has retained any practical capability (facilities or hardware) for the production of such material." The skepticism was backed by the US Department of State's Bureau of Intelligence and Research, which indicated that the evidence was "inadequate" to conclude that Iraq is pursuing an "integrated and comprehensive approach to acquire nuclear weapons." See

Jeffrey T. Richelson, *Spying on the Bomb: American Nuclear Intelligence from Nazi Germany to Iran and North Korea* (New York: W. W. Norton & Company, 2007), 485.

37. Rovner, *Fixing the Facts*, 137–84; and Paul R. Pillar, *Intelligence and U.S. Foreign Policy: Iraq, 9/11, and Misguided Reform* (New York: Columbia University Press, 2014).

38. Once the assumption that Iraq had these weapons took hold, the bias among intelligence organizations was toward reinforcement over change. The obvious question was, “Why wouldn’t Iraq come clean, now, if it had nothing to hide?” That Iraq acted furtively—and had previously deceived the outside world—colored all assessments of Iraqi behavior. As a result, exculpatory evidence was mistaken for subterfuge; the lack of evidence was treated as confirmatory evidence; implicating evidence was viewed as more compelling than a lack of information where it should have been found; and alternative explanations for the evidence were ignored or discounted when the evidence also confirmed preferred explanations. See Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, “Chapter 1 Case Study: Iraq,” in *Report to the President of the United States* (Washington, DC: Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, 31 March 2005), https://fas.org/irp/offdocs/wmd_report.pdf; and Senate Select Committee on Intelligence, *Report on the U.S. Intelligence Community’s Prewar Intelligence Assessments on Iraq* (Washington, DC: Senate, July 2004), 7, http://fas.org/irp/congress/2004_rpt/ssci_iraq.pdf. For an excellent summary and analysis, see Robert Jervis, *Why Intelligence Fails: Lessons from the Iranian Revolution and the Iraq War* (Ithaca, NY: Cornell University Press, 2010).

39. Mark Landler and Helene Cooper, “Obama Rebuffs Netanyahu on Setting Limits on Iran’s Nuclear Program,” *New York Times*, 14 September 2012, A7.

40. Robert Jervis, “Getting to Yes with Iran: The Challenges of Coercive Diplomacy,” *Foreign Affairs* 92, no. 1 (January–February 2013), 110.

41. On this so-called commitment trap, see Scott D. Sagan, “The Commitment Trap: Why the United States Should Not Use Nuclear Threats to Deter Biological and Chemical Weapons Attacks,” *International Security* 24, no. 4 (Spring 2000): 85–115.

42. That question will remain should one or more countries attack Iran’s nuclear facilities in the near or long term. After an attack, Iran might still retain parts of its nuclear infrastructure, close its facilities entirely to inspection, and commit fully to building a bomb to guard against future attacks.

43. For the pros and cons on attacking Iran, see, respectively, Matthew Kroenig, “Time to Attack Iran: Why a Strike is the Least Bad Option,” *Foreign Affairs* 91, no. 1 (January–February 2012): 76–86; and Colin H. Kahl, “Not Time to Attack Iran: Why War Should Be a Last Resort,” *Foreign Affairs* 91, no. 2 (March–April 2012): 166–73.

44. For a summary of the proposals and counterproposals, see Arms Control Association, “History of Official Proposals on the Iranian Nuclear Issue,” January 2014, http://www.armscontrol.org/factsheets/Iran_Nuclear_Proposals.

45. Increasingly, the negotiations “lost comprehensiveness” as Western negotiators tried to carve out areas of agreement to facilitate trust building, dropped preconditions for negotiations (for example, the suspension of Iranian nuclear activities), focused on pressing issues (such as Iran’s decision to enrich uranium to 20 percent, ostensibly for its research reactor), or sought to curtail at least *portions* of the Iranian nuclear program.

46. See, for example, International Crisis Group, “Iran and the P5+1: Solving the Nuclear Rubik’s Cube,” *Middle East Report*, no. 152, 9 May 2014, 17–19, <http://www.crisisgroup.org/-/media/Files/Middle%20East%20North%20Africa/Iran%20Gulf/Iran/152-iran-and-the-p5-plus-1-solving-the-nuclear-rubiks-cube.pdf>.

47. Under the July 2015 agreement that followed, the issue was left to the IAEA to resolve. In December 2015 the IAEA issued its report, concluding that Iran had previously engaged in nuclear-weapons research. Iran's interlocutors expressed a desire to move forward nonetheless, rather than dwell on Iran's prior activities; critics charged that failing to hold Iran accountable would create monitoring blind spots and sacrifice reference points for judging Iran's full compliance with the agreement.

48. Carol Morello and Karen DeYoung, "In Iran Nuclear Talks, Near-Collapse before Breakthrough," *Washington Post*, 8 April 2015, A6.

49. Michael Gordon, "Outline of Iran Nuclear Deal Sounds Different from Each Side," *New York Times*, 4 April 2014.

50. Unfortunately for outside observers, the implicating and the exculpatory evidence were fundamentally inconclusive: leaders sometimes feign intransigence to appease domestic supporters, deflect challenges from the opposition, or reap benefits in the negotiations by alluding to the constraints that the internal squabbling imposes on their negotiating flexibility. See Robert D. Putnam, "Diplomacy and Domestic Politics: The Logic of Two-Level Games," *International Organization* 42, no. 3 (Summer 1988): 427–60. In struggling to decipher mixed messages, Western diplomats had to decide whether to tread softly so as not to taint, embarrass, or provoke the accommodative faction.

51. For instance, see David Albright, Olli Heinonen, and Andrea Stricker, "Five Compromises to Avoid in a Comprehensive Agreement with Iran," *Institute for Science and International Security Report*, 3 June 2014, http://www.isisonline.org/uploads/isisreports/documents/Five_Bad_Compromises_3June2014final.pdf; and Institute for Science and International Security, "Defining Iranian Nuclear Programs in a Comprehensive Solution under the Joint Plan of Action," *Institute for Science and International Security Report*, 15 January 2014, http://www.isisonline.org/uploads/isisreports/documents/Elements_of_a_Comprehensive_Solution_20Jan2014_1.pdf.

52. David Ignatius, "Closer, but Still No Deal on Iran," *Washington Post*, 23 April 2014, A15.

53. Charles S. Robb and Charles F. Wald, *Evaluating a Nuclear Deal with Iran* (Washington, DC: Bipartisan Policy Center, 2014), 30, <http://bipartisanpolicy.org/wp-content/uploads/sites/default/files/BPC%20Evaluating%20an%20Iran%20Nuclear%20Deal.pdf>.

54. Joint Comprehensive Plan of Action, Vienna, Austria, 14 July 2015, <https://medium.com/the-iran-deal/joint-comprehensive-plan-of-action-5cdd9b320fd#2c99>.

55. How successfully Iran could hide evidence given satellite surveillance and residual radioactivity remained in dispute. For an excellent discussion of these issues, see Gary Samore, ed., *The Iran Nuclear Deal: A Definitive Guide* (Cambridge, MA: Belfer Center for Science and International Affairs (BCSIA), August 2015), 38–39. http://belfercenter.ksg.harvard.edu/publication/25599/iran_nuclear_deal.html.

56. Jacques E. C. Hymans, "The Threat of Nuclear Proliferation: Perception and Reality," *Ethics and International Affairs* 27, no. 3 (2013): 281–98.

57. On this, see Austin Long, "If You Really Want to Bomb Iraq Take the Deal," *Monkey Cage* (blog), *Washington Times* (web site), 3 April 2015, <https://www.washingtonpost.com/blogs/monkey-cage/wp/2015/04/03/if-you-really-want-to-bomb-iran-take-the-deal>.

58. Quoted in Jennifer Rubin, "Voting 'No' Is the Way to Prevent War," *Right Turn* (blog), *Washington Post* (web site), 15 July 2015, <https://www.washingtonpost.com/blogs/right-turn/wp/2015/07/15/voting-no-is-the-way-to-prevent-war/>.

59. See, for instance, Fareed Zakaria, "Sen. Shumer's Illogical Case against the Iran Deal," *Washington Post*, 13 August 2015, <https://www.washingtonpost.com/opinions/dear>

-sen-schumer-dont-vote-against-the-iran-nuclear-deal/2015/08/13/7b806630-41f4-11e5-846d-02792f854297_story.html.

60. To be sure, some critics have focused their skepticism on the far end of the agreement in conceding that “the deal would block the uranium enrichment, plutonium separation and covert paths to a nuclear bomb for the next 15 years.” Dennis Ross and David H. Petraeus, “The Bit in the Iran Nuclear Deal,” *Washington Post*, 26 August 2015, A19.

61. Carol Morello, “Retired Generals and Admirals Urge Congress to Reject Iran Nuclear Deal,” *Washington Post*, 26 August 2015, https://www.washingtonpost.com/world/national-security/retired-generals-and-admirals-urge-congress-to-reject-iran-deal/2015/08/26/8912d9c6-4bf5-11e5-84df-923b3ef1a64b_story.html.

62. See, for example, Kelsey Davenport, “Reflections on Iran’s Nuclear Program: Beyond 15 Years,” *Arms Control Today* 7, no. 9 (25 August 2015): <https://www.armscontrol.org/Issue-Briefs/2015-08-25/Restrictions-on-Irans-Nuclear-Program-Beyond-15-Years>.

63. For political reasons, supporters reluctantly acknowledge their reliance on such optimism. Gardiner Harris, “Deeper Mideast Aspirations Seen in Nuclear Deal with Iran,” *New York Times*, 31 July 2015, <http://www.nytimes.com/2015/08/01/world/middleeast/deeper-mideast-aspirations-seen-in-nuclear-deal-with-iran.html>.

64. See Kelsey Davenport, “Iran Dismantling Centrifuges, IAEA Says,” Arms Control Association (web site), December 2015, <http://www.armscontrol.org/taxonomy/term/153>.

65. Alexandra Jaffe, “Colin Powell: Iran Deal Is a ‘Pretty Good Deal,’” *NBC News*, 6 September 2015, <http://www.nbcnews.com/storyline/iran-nuclear-talks/colin-powell-iran-deal-pretty-good-deal-n422551>.

66. “36 Retired U.S. Generals and Admirals Announce Support of Iran Deal,” *Haaretz* (Israel), 12 August 2015, <http://www.haaretz.com/world-news/1.670756>.

67. Aaron M. Hoffman, *Building Trust: Overcoming Suspicion in International Conflict* (Albany: State University of New York Press, 2006).

Revealed Preference and the Minimum Requirements of Nuclear Deterrence

Dallas Boyd

Abstract

US national security policy features a striking inconsistency in its leaders' tolerance for the risk of nuclear terrorism and nuclear war respectively. Policies concerning the former suggest an overwhelming aversion to the risk of a nuclear attack. By contrast, US offensive nuclear capabilities, which are configured for preemptive counterforce strikes, imply at least some tolerance for the risk of nuclear retaliation. Yet this retaliation could be many times more severe than an act of nuclear terrorism—an event that American leaders suggest is intolerable. A further inconsistency is that the conventional criteria for a successful first strike only account for an enemy's constituted nuclear weapons. This differs from the standard that governs US counterterrorism policy, which holds that the mere possession of fissile material constitutes a nuclear capability. A more consistent nuclear doctrine would consider that any state capable of engineering a single nuclear detonation on American soil may be able to deter the United States. If internalized uniformly, this low damage tolerance could preclude many scenarios involving preemptive attacks, which in turn may cast doubt on the United States' ability to exercise nuclear coercion.

* * * * *

More than 40 years ago, National Security Advisor McGeorge Bundy noted the existence of “an enormous gulf between what political leaders really think about nuclear weapons and what is assumed in complex calculations of relative ‘advantage’ in simulated strategic warfare.” He considered analysts who spoke of “acceptable” damage running into the tens of millions of lives to inhabit an “unreal world.” In reality, Bundy believed “a decision that would bring even one hydrogen bomb on one city

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of one's own country would be recognized in advance as a catastrophic blunder."¹ Yet, at the time of his writing, the United States and the Soviet Union were still fearful of falling victim to the other's first-strike superiority, and at the end of the Cold War, more than 20 years later, each side continued to deploy more than 10,000 strategic weapons.²

The gulf that Bundy described persists in the present day, even as the number of warheads in the major powers' arsenals has sharply receded. However, the veil shrouding what American leaders really think about nuclear weapons has partly lifted, exposing a vast divergence between their apparent views and US nuclear doctrine. Nowhere is this divide more striking than in these leaders' attitudes toward the risk of nuclear terrorism and the risk of nuclear war. If the rhetoric of many US officials is to be believed, a terrorist nuclear attack would represent an almost inconceivable calamity. "Just one nuclear weapon exploded in a city," Pres. Barack Obama has argued, would devastate "our very way of life" and constitute nothing less than "a catastrophe for the world."³

Together with the range of defenses against this threat, these statements suggest a pronounced aversion to the risk of a nuclear attack. By contrast, the US nuclear posture features substantial offensive nuclear capabilities, implicitly accepting the risks that would attend a nuclear attack *initiated by the United States*. Indeed, some analysts have asserted that the United States is intentionally pursuing "nuclear primacy"—the ability to eliminate an enemy's nuclear forces entirely in a first strike.⁴ Yet, the exercise of this advantage would expose the nation to the risk of retaliation far more severe than a terrorist nuclear attack—an outcome that its leaders suggest is intolerable. What explains this contradiction?

There are two principal explanations. One is that these differing risk tolerances are highly circumstantial and thus cannot be compared. According to this logic, the offensive use of nuclear weapons would be considered only in defense of a truly vital national interest, which would naturally require a higher tolerance for risk than would be operative in peacetime.⁵ The risk of nuclear terrorism, by contrast, does not shift dramatically in response to US actions, nor would a decision that increases this risk be offset by a potential reward. This distinction argues against a uniform risk tolerance, even if both scenarios may involve a nuclear detonation on American soil. However, it strains credulity to believe that such wildly divergent attitudes toward a nuclear attack could consciously coexist in decision makers' minds. Far more likely is the second

explanation: that one of these attitudes is insincere. Either US leaders are less fearful of a terrorist nuclear attack than their policies and rhetoric imply or they retain offensive capabilities that their appetite for risk should never allow them to employ.

Ascertaining their true risk tolerance borrows from the economic theory of “revealed preference,” which holds that consumer tastes are discernible from purchasing behavior.⁶ Various US security policies serve a similar function, telegraphing American leaders’ aversion to the risk of a nuclear attack. The most obvious of these policies are countermeasures against nuclear terrorism, such as programs to secure fissile material abroad and scan for radiation at maritime ports. Other signals include US nonproliferation and counterproliferation efforts, the doctrine of preventive war, and the pursuit of ballistic missile defenses. Each of these policies shares a common denominator in the belief that even one bomb in the hands of an enemy that cannot be deterred poses an unacceptable threat.

This commonality has a profound but overlooked implication for the offensive use of nuclear weapons. Because a nation subjected to a first strike may no longer have reason to be deterred, its leadership might fairly be considered “undeterrable” as well. Furthermore, by the standard of US counterterrorism policy, which considers the mere possession of fissile material to equal a nuclear capability, even a first strike that eliminated an enemy’s nuclear weapons completely would not neutralize its ability to retaliate. It follows logically that the United States’ risk aversion concerning terrorists and pariah states should inform its stance toward *any* adversary with a nuclear capability.

This article therefore has two objectives. The first is to contend that US leaders’ aversion to the risk of nuclear terrorism reflects their fundamental view of a nuclear attack. The second is to scrutinize the notion that an enemy’s capacity for nuclear retaliation can be neutralized with such confidence as to overcome this extreme intolerance for risk. This exercise sheds light on a question that has been debated since the beginning of the nuclear age: What is the minimum number of nuclear weapons that is necessary to deter? In the case of the United States, the answer is clear. Any state that can engineer a single detonation in an American city may be able to immunize itself from nuclear coercion, much less nuclear attack. This conclusion calls into question virtually every function of the US nuclear arsenal save its most basic—detering a nuclear

attack on the United States. Any use of US nuclear weapons beyond this limited purpose requires the resolve to risk nuclear retaliation—a resolve American leaders do not appear to possess.

The case for this proposition begins by cataloging the policies that reveal US leaders' abhorrence of the prospect of a nuclear attack. It then examines the evidence that US nuclear forces and related capabilities are oriented toward preemptive counterforce strikes and questions the belief that such an attack can be conducted with acceptable risk. The analysis draws on the concept of delayed retaliation using unconventional delivery means, such as those commonly associated with nuclear terrorism. Because these modes of attack are no less useful to governments than terrorists, they may provide a second-strike capability that fulfills the basic requirements of deterrence. The analysis also considers the circumstances in which a nuclear-capable state might be self-deterred from retaliating after a nuclear attack. Finally, it discusses implications for the US nuclear posture.

Revealed Preference in US National Security Policies

That a consensus exists on the unacceptability of a nuclear attack is perhaps unremarkable. Yet, the breadth of policies that reflect this view is so wide, and their influence on the United States' strategic conduct so profound, they cannot but reveal an utter intolerance for this risk. Among these policies is the wide-ranging effort to slow the spread of nuclear weapons, which has led successive administrations to confront North Korea, Iraq, Iran, Libya, and others over their illicit nuclear programs. Several of these countries have also figured in the decades-long pursuit of ballistic missile defenses. Most tellingly, the United States led the overthrow of Saddam Hussein's regime in part over concerns the Iraqi dictator had resumed his pursuit of nuclear arms.

Underlying these diverse policies is the concern that the threat of punishment alone might not deter an attack on the United States—a fear that continues to animate the US response to Iran's nuclear ambitions. Because deterrence may not afford the same protection against certain adversaries as it does against the established nuclear powers, the United States expends enormous effort on alternative means to cope with these problem states.⁷ The fear of undeterrable actors is especially palpable in regard to would-be nuclear terrorists, and nowhere is the fear of these

weapons more plainly revealed than in US leaders' distress over the terrorist threat.

Nonproliferation, Counterproliferation, and Preventive War

The United States' two major political parties share the belief that a nuclear detonation on US soil would radically alter the American way of life. However, the preferred responses to this threat diverge sharply. The left has tended to favor the nuclear nonproliferation regime, while the right has emphasized counterproliferation policies. Ironically, both approaches have partly been necessitated by earlier US policies that enabled the spread of nuclear technology. In the 1950s, the United States launched the Atoms for Peace program to supply nuclear reactors, fuel, and scientific training to developing countries pursuing nuclear energy.⁸ Indeed, this policy enabled the early nuclear programs of Iran, India, and Pakistan—three countries that have presented perennial challenges to the nonproliferation regime.⁹ Following India's 1974 detonation of a "peaceful nuclear explosion," which illustrated the inadequacy of the Atoms for Peace program's nonproliferation safeguards, the United States began to reverse course and has sought to control access to nuclear technology and materials ever since.¹⁰

On the extreme end of the containment spectrum is the doctrine of preventive war, under which a state reserves the right to eliminate a catastrophic threat before it materializes. Pres. George W. Bush pressed for the invasion of Iraq on this basis, declaring that the United States could not wait for proof of Iraq's nuclear program to come "in the form of a mushroom cloud."¹¹ While the fear of an unprovoked nuclear strike helps explain these policies, there is an additional explanation: US leaders are concerned that nuclear weapons in the hands of pariah states would impose unacceptable constraints on American freedom of action abroad. As Bruce Blair and Chen Yali argue, these policies reflect an understanding that the United States can be deterred with even the most "primitive and diminutive of nuclear arsenals." This recognition explains why the United States "goes to such extraordinary lengths to prevent adversaries from acquiring even one solitary bomb in the first place."¹²

Ballistic Missile Defense

Failing efforts to stop the spread of nuclear weapons, the United States has pursued another countermeasure in the form of ballistic missile defenses. The debate over this system, while intensely partisan, features a revealing intersection of belief between opponents and advocates. Proponents such as Richard Perle contend that without missile defenses, “we are vulnerable to any country or movement that manages to obtain even a single missile capable of reaching the United States.”¹³ Skeptics counter that the system could easily be circumvented and that no responsible leader would ever gamble a single city on the failure of alternative means of attack. As Charles L. Glaser and Steve Fetter argue, “even a small probability of having one US or allied city destroyed by a rogue nuclear weapon would be too large to warrant . . . overthrowing a rogue leader.”¹⁴ Thus, the debate is illuminating not for its insight into the system’s reliability but for making explicit US leaders’ maximum damage tolerance—a single nuclear detonation on American soil. If any confirmation of this conviction were needed, it emerged in the widespread anxiety over nuclear terrorism in the post-9/11 era.

Nuclear Terrorism

After the terrorist attacks on the US homeland, the fear of an even greater catastrophe consumed policy makers and the public alike. Expert commentary on the probability of a terrorist nuclear attack and ever more lurid descriptions of its effects flamed this dread. One widely cited study estimated that a single 10-kiloton device detonated in New York City would kill as many as 500,000 people.¹⁵ Assessments of this sort led to a rare convergence of opinion among US leaders, which Pres. Barack Obama captured in his description of nuclear terrorism as “the single biggest threat to US security.”¹⁶ Accordingly, preventing nuclear proliferation and nuclear terrorism figured prominently in the president’s 2009 Prague speech, and these objectives were first among the five priorities listed in the 2010 *Nuclear Posture Review*.¹⁷

While such messaging conveys an unmistakable horror of nuclear terrorism, the true measure of how seriously leaders take this threat lies in the policies they have enacted to guard against it. Foremost on this list are efforts to place nuclear materials beyond the reach of terrorists, a practice that had its origins in the Cooperative Threat Reduction program to

secure nuclear weapons and materials in the former Soviet Union. Later policies would expand on this model, including programs to consolidate separated plutonium in secure locations and convert civilian research reactors to low-enriched uranium fuels. The United States also operates an array of programs to detect the smuggling of nuclear weapons and materials around the world. Under the Second Line of Defense, for example, radiation detectors have been installed at nearly 500 border crossings and airports in the former Soviet Union. The Megaports Initiative operates detectors at ports in more than a dozen countries in Europe, South America, Southeast Asia, and the Caribbean, while the Secure Freight Initiative conducts scanning at ports in Pakistan, Honduras, Singapore, South Korea, Oman, and the United Kingdom. Likewise, some 1,400 radiation portals have been installed at US ports, which complement various domestic tools to detect nuclear devices. Finally, the United States maintains a global intelligence network to monitor for materials trafficking and terrorist activity relating to nuclear weapons.

The breadth and expense of this architecture should underscore the United States' consummate fear of a nuclear attack. However, the implications of this fear are not limited to terrorists and pariah states. It may also have powerful but underrecognized effects on the outcomes of crises between the United States and other major nuclear powers. Prevailing in standoffs with these states depends in part on the projection of resolve, particularly when the use of nuclear weapons is at stake. In this situation, discernible anxiety over even a limited nuclear attack undermines the US bargaining position. This fear does particular harm to the credibility of nuclear threats, which are thought to confer coercive leverage in crises. This is so because such threats require their issuer to appear willing to follow through with a first strike, which in turn requires a willingness to risk some level of damage in retaliation. As Herman Kahn argued, in the nuclear arena "credibility depends on being willing to accept the other side's retaliatory blow. It depends on the harm he can do, not the harm we can do."¹⁸ Nuclear coercion will not succeed if the threatened state perceives its antagonist's damage tolerance to be extremely low and the defender can credibly deliver this level of punishment. Because American leaders may have unwittingly advertised their maximum damage tolerance in the horror they assign to a single nuclear detonation, there is reason to doubt the effectiveness of US nuclear threats.

That US leaders believe they can simultaneously deter nuclear rivals while threatening aggression stems from an artificial distinction between two types of adversaries. In the first category are states—principally Russia and China—with which the United States maintains classic deterrence relationships. The second group is comprised of potentially undeterrable actors against whom US policies on nonproliferation, missile defense, and nuclear counterterrorism are oriented. Yet, this distinction has little bearing where the *offensive* use of nuclear weapons is concerned. In many scenarios, a state subjected to a nuclear attack would have little left to lose, making its leaders no less constrained in retaliating than terrorists would be in attacking outright. Thus, the risk aversion that informs US policy toward the latter should arguably figure in any consideration of an attack on a nuclear power. Overlooking this essential similarity is a significant failure of logic—one that permits a potentially destabilizing emphasis on offensive nuclear capabilities.

The Conceit of Nuclear Primacy

The pioneers of nuclear deterrence theory surmised that a nation would not attack an enemy's cities with nuclear weapons because its own cities would inevitably be destroyed in turn and no advantage would be gained from striking first. Thus, these weapons offered some promise of stability. However, this optimism was soon extinguished by the ballistic missile, the accuracy of which theoretically enabled an enemy's nuclear forces rather than its population centers to be destroyed. Under such an attack, retaliation might be avoided altogether, presenting an incentive to launch a disarming strike. The danger of this temptation defined the brief but terrifying period before the United States and the Soviet Union came to accept their mutual vulnerability, which many scholars consider to have occurred around the time of the Cuban missile crisis. While both sides maintained offensive attack plans for decades afterward, strategists generally accepted that striking first would be successful only if the attacker faced a manageable number of weapons, knew their precise number and location, and could destroy them before they were fired or relocated.¹⁹ A modicum of "first-strike uncertainty" about these conditions or a "seed of doubt" in the minds of decision makers was deemed sufficient to deter.²⁰

Since the end of the Cold War, however, the development of certain US capabilities has hinted that this hard-won appreciation of mutual deterrence has eroded. In 2006 scholars Keir Lieber and Daryl Press created a sensation in the nuclear policy world when they argued that, as a result of increasing missile accuracy and other advances, the United States was fast approaching an era of “nuclear primacy.” Under this paradigm, US leaders would have the “ability to destroy all of an adversary’s nuclear forces” in a preemptive strike.²¹ To support this assertion, Lieber and Press modeled a US nuclear attack on Russia and concluded that the United States would have “a good chance” of completely eliminating Russia’s intercontinental ballistic missiles (ICBM), heavy bombers, and ballistic-missile submarines. Consequently, they argued that Russia’s leaders “can no longer count on a survivable nuclear deterrent.” Lieber and Press asserted that China is even more vulnerable, calculating in a separate model that the probability of a US attack destroying every one of China’s 20 silo-based ICBMs stood at “well above 95 percent.”²²

Members of the nuclear establishment hotly deny that the United States is pursuing a disarming first-strike capability. Strategist Keith Payne, for example, argues that Lieber and Press’s work represents a “gross mischaracterization of US policy,” citing as evidence declassified documents and authoritative statements by government officials.²³ However, deducing the orientation of the US arsenal toward preemptive attacks requires no explicit acknowledgement to that effect. Inferences can be made about a state’s intended use of nuclear weapons from the size and structure of its arsenal and other related capabilities. Aside from the high accuracy of its missiles, the United States has developed numerous platforms with unmistakable first-strike applications, among them stealth bomber aircraft to penetrate enemy air defenses, space-based systems to track mobile missiles, and precision conventional munitions to destroy command and control facilities. The breadth of US investment in intelligence capabilities for a first strike is especially telling.²⁴ Analysis of such capabilities led a team of RAND Corporation analysts to the obvious conclusion that beyond central deterrence, US strategic forces appear “best suited to provide . . . a preemptive counterforce capability against Russia and China.” Absent this mission, the size and operational doctrine of the nuclear posture “simply do not add up.”²⁵

While these capabilities are undoubtedly impressive, they reflect a premise that appears to be greatly out of step with US leaders’ revealed

preference concerning risk. The conceit of nuclear primacy is the notion that destroying a state's nuclear forces-in-being, and particularly its ICBMs, is synonymous with eliminating its capacity to retaliate. Christopher Chyba and J. D. Crouch capture this misconception in their definition of nuclear primacy as the ability to launch a "confident and disarming nuclear first strike . . . such that no retaliation with *strategic nuclear forces* would be possible" (emphasis added).²⁶ Nor is this myopia limited to American strategists. Chinese scholars Li Bin and Nie Hongyi worry that some US thinkers are "certain the United States can rely on a preemptive nuclear strike to completely destroy China's *long-range nuclear weapons*" (emphasis added).²⁷ These writings tend to underplay, or ignore altogether, unconventional means of delivering retaliatory weapons.²⁸ As such, they betray a basic misunderstanding of the requirements of a successful first strike—at least for an attacker whose damage tolerance is exceedingly low.

As American leaders' rhetoric and policies continually imply, even a modest retaliatory blow would far exceed their stated maximum damage tolerance: a single nuclear detonation. To avoid this risk, a US first strike would have to be quite splendid indeed, destroying not only long-range weapons but also medium- and short-range missiles and nonstrategic warheads. Additionally, nondeployed and inactive warheads would have to be eliminated, for if even one survived, a counterstrike on an American city would be distinctly possible. Yet, by the standard that governs US policies toward terrorists and pariah states, destroying an enemy's constituted weapons would still be insufficient. True nuclear primacy would also require the elimination of a state's nuclear infrastructure and fissile material stocks because these assets could eventually be used to effect a crude form of retaliation. Given that their destruction would be virtually impossible, nuclear primacy is a pursuit fraught with the potential for catastrophe—a conclusion with profound implications for the minimum requirements of deterrence.

Deterrence: Defining Adequacy Down

In determining the appropriate size and composition of a nuclear arsenal, two divergent schools of thought contend. According to the first view, a delicate balance of terror exists between nuclear rivals that can only be maintained if both sides can impose intolerable damage on the

other even after absorbing a first strike.²⁹ This task is thought to require substantial, highly survivable arsenals and stringent operational protocols to govern their use. The US and Russian nuclear postures reflect this view, although considerable scholarship has documented the extent to which factors other than strategic necessity drove the growth of their arsenals during the Cold War. Among these factors were inter- and intra-service rivalries in both countries and bald political posturing, typified by the US political debate over the “missile gap.”³⁰ Similarly, institutional inertia largely explains the maintenance of nuclear stockpiles today that are similar in configuration if not in size to Cold War postures a generation after that conflict ended. Thus, these arsenals should not be seen as expressions of either nation’s true deterrence needs, nor should they nurture the presumption that the strength of deterrence is proportional to the size of one’s stockpile.

The opposing school of thought, often referred to as “minimum deterrence,” posits that stability is achieved with a relatively small nuclear force and that little, if any, marginal benefit accrues with each additional warhead. Indian defense specialist Rajesh Basrur describes this view as the understanding that “it is not necessary to have large numbers of sophisticated weapons to deter nuclear adversaries; that nuclear ‘balances’ are not meaningful; and that weapons need not be deployed and kept in a high state of readiness in order that deterrence be effective.”³¹ Some scholars believe that an even more modest nuclear posture can meet a state’s deterrence needs. These advocates of “virtual nuclear arsenals” argue that the latent capability to build nuclear weapons may be sufficient to deter—a concept that will be revisited later in this article.³²

China’s nuclear arsenal is clearly an expression of the minimalist school. Taylor Fravel and Evan Medeiros describe the Chinese deterrent as one that offers simply “assured retaliation,” which reflects the belief that “a small number of survivable weapons would be enough to retaliate and impose unacceptable damage on an adversary.”³³ As Chinese Maj Gen Pan Zhenqiang puts it, “as long as you are able to give a devastating counter-attack against one or two US big cities, the scenario [is] enough to make the attacker who had the intention of preemptive nuclear strike pause, and hopefully drop [an attack] plan.”³⁴

Minimum deterrence is not without its critics, of course. Lieber and Press dispute the “notion that deterrence will hold as long as countries face the mere possibility of losing a single city,” which they insist is “not

well supported by historical evidence.” Citing the outbreaks of the First and Second World Wars, they argue that conflicts “always begin with at least one country taking a tremendous risk, and these gambles are often bigger than the terrible prospect of losing a city.”³⁵ Nuclear policy analyst Ward Wilson goes further, asserting that the *actual* destruction of cities has failed to impress leaders throughout history.³⁶ He cites as evidence a revisionist explanation for Japan’s surrender in World War II, which credits the Soviet declaration of war as the crucial factor in that decision rather than the atomic bombings, which were simply extensions of a bombing campaign that had already devastated Japan’s cities.³⁷ From this data point, Wilson contends that city destruction has no effect on decision making, which, he claims, undermines the very premise of nuclear deterrence. “If destroying one or two cities does not coerce an opponent,” he writes, “then perhaps the threat of limited nuclear retaliation does not deter when the stakes are high enough.”³⁸

It is telling that those who assert leaders’ wild risk tolerances must reach back seven decades for confirming evidence to this effect. Indeed, Wilson asks us to accept that the callousness of Japan’s leaders—the war-time rulers of a martial culture—is instructive of deterrence calculations in the present day. On the contrary, many foreign strategists now believe that weapons in the low single digits are quite adequate for deterrence. To wit, several scholars at India’s Institute for Defence Studies and Analyses endorse the most minimal deterrent against China. Swaran Singh, for instance, “advocates the targeting of five cities,” while Sujit Dutta is “of the opinion that China would be deterred if . . . its adversary could destroy even three major cities.”³⁹ The late K. Subrahmanyam, arguably India’s most respected nuclear strategist, set the bar lowest of all, writing that “it is now recognized that one bomb on one city is unacceptable.”⁴⁰

Central to the question of the minimum requirements of nuclear deterrence are the criteria for a deterrent force to be considered “credible.” Conventional wisdom holds that several characteristics are necessary to apply this label, among them survivable second-strike weapons and command and control facilities. However, the definition of a second-strike weapon is somewhat nebulous. At the most basic level, a state is “nuclear capable” if it has sufficient fissile material and expertise to build a nuclear explosive device. The next level is achieved when a state actually builds said device. More credible still is a confirmation to that effect in the form of an explosive test, along with a demonstrated means

of delivery such as a ballistic missile.⁴¹ Finally, a state may take measures to place its weapons beyond the reach of an enemy attack, usually by deploying them on mobile launchers or submarines or within hardened missile silos. Victor Cha, who served as a policy adviser on the National Security Council during the George W. Bush administration, presents two additional criteria in an analysis of North Korea's deterrent: a proven missile reentry capability and evidence of warhead miniaturization. Without these capabilities, he writes, Pyongyang's small arsenal "does not come close to a credible nuclear deterrent," and the regime "gets no added security from these weapons."⁴²

If the United States' anxiety over nuclear terrorism is any guide, these requirements vastly overstate the threshold for credibility. After all, the fear that North Korea might transfer a nuclear weapon to terrorists has been central to the case for reversing its nuclear program. If these weapons pose a catastrophic threat in the hands of extremists, on what basis should they be considered less threatening when deployed by their original owners? In truth, Pyongyang can have confidence in its minimalist posture for two reasons. First, contrary to the emphasis placed on strategic delivery vehicles, such platforms are not necessary for nuclear retaliation. In extreme circumstances, a variety of unconventional delivery means can be used. As the late political scientist Kenneth Waltz observed, "Everybody seems to believe that terrorists are capable of hiding bombs. Why should states be unable to do what terrorist gangs are thought to be capable of?"⁴³ Second, no arbitrary deadline exists for a state to respond to a nuclear attack. Retaliation may come weeks or even months after a first strike, providing ample time to prepare nondeployed warheads or even construct a makeshift weapon from available nuclear material. Together these concepts call into question the key assumption on which nuclear primacy rests: that a nuclear counterstrike must come immediately and in the form of ballistic missile attacks, or not at all. This questionable premise permits US leaders to entertain first strike scenarios that are wildly at odds with their apparent tolerance for risk.

Delayed—But Assured—Retaliation

During the Cold War, it was widely assumed that the United States and Soviet Union would launch a substantial portion of their arsenals the moment either believed itself to be under nuclear attack. Today

retaliation may occur at a more plodding pace, in part because military imbalances are much more pronounced. A US first strike might virtually eliminate an enemy's deployed weapons, requiring considerable time and effort for the state to respond. Additionally, delay is implicit in "no first use" policies, which commit a state not to use nuclear weapons except in retaliation for a nuclear attack. One such state is India, the nuclear strategy of which scholar Ashley Tellis describes as emphasizing "delayed—but assured—retaliation." This posture reflects the belief that "for purposes of deterrence, the ability to retaliate with certainty is more important than the ability to retaliate with speed."⁴⁴

US planners' dismissal of this posture generally centers on doubts about the "certainty" of assured retaliation. According to this line of thinking, no state can be completely confident of its second-strike capacity, especially if elaborate precautions are not taken to preserve it. Yet, this view conflicts with the basic premise of US counterterrorism policy, which emphasizes fissile material rather than assembled weapons as the most basic nuclear threat. As the National Research Council notes, lack of access to this material is the "primary impediment that prevents countries or technically competent terrorist groups from developing nuclear weapons."⁴⁵ Its mere possession, on the other hand, confers significant deterrent value even in nonweapon form. Indeed, Albert Wohlstetter, Gregory Jones, and Roberta Wohlstetter present the case of a state that is losing a short conventional war but possesses plutonium "in explosive concentrations" along with the "capability of assembling an implosion system." In light of this combination, they write, "from the standpoint of the adversary who had been winning, it would be facing a government which to all practical effect had nuclear weapons."⁴⁶

By this standard, possession of fissile material alone ensures that a state can never truly be disarmed. Even after a highly successful first strike, the defender could use its surplus plutonium or highly enriched uranium to develop a crude retaliatory weapon, which it could then deliver using unconventional means. Only a small quantity of this material is needed, as US leaders frequently admonish. President Obama has warned that a mass of plutonium "about the size of an apple" would threaten hundreds of thousands of people.⁴⁷ The International Atomic Energy Agency defines a "significant quantity" of plutonium—the approximate amount needed to produce a nuclear explosive device—as 8 kg.⁴⁸ This unit of measurement should be kept in mind in any discus-

sion of a disarming strike on China, which possesses roughly 1.8 tons of weapons-grade plutonium.⁴⁹

Of course, it is far from certain that a nation subjected to a nuclear first strike would succeed in developing and delivering a crude retaliatory weapon to its enemy's territory. However, necessity has always produced remarkable improvisation during wartime. After a nuclear attack, a state could devise unorthodox methods of retaliating, which suggests that credibility, that "magic ingredient" of deterrence, might be purchased more cheaply than is commonly supposed.⁵⁰

Unconventional Delivery Modes

The concept of delivering nuclear weapons clandestinely dates to the earliest days of the nuclear age, when analysts imagined a range of exotic delivery means. In 1947, for example, the Federal Bureau of Investigation speculated that "a complete atom bomb could be smuggled into the United States as freight . . . and the bomb could be detonated by remote control."⁵¹ As the Cold War progressed, both the United States and the Soviet Union developed man-portable nuclear weapons and the protocols for delivering them.⁵² In the last two decades, unconventional delivery modes have often been discussed in scenarios involving terrorists and pariah states. In particular, this possibility has figured in the debate over missile defense, with opponents claiming that a state could easily circumvent the system using watercraft, pre-positioned nuclear devices, and the like.

More recently, this concept has been revisited in the context of nuclear war between the great powers. In the debate over Lieber and Press's analysis, for instance, Jan Lodal, former principal deputy undersecretary of defense, suggested that nuclear weapons could be smuggled into the United States on "pleasure boats" as a means of ensuring a second-strike capability. He conceded that this form of attack could not be used to defeat the United States but argued that the "possibility of [water-borne retaliation] does make the idea of a totally disarming attack against an adversary's nuclear forces nonsense."⁵³ While skeptics tend to dismiss these scenarios as the product of overactive imaginations, this bias stems from the odd perception that annihilating cities with megaton-class weapons is at once more credible and somehow more respectable than delivering Hiroshima-size bombs clandestinely. Another source of skepticism is the

belief that such delivery means simply offer less deterrent value than traditional modes of attack. As the National Intelligence Council (NIC) observes, the former “do not provide the same prestige, deterrence, and coercive diplomacy as ICBMs.” However, the NIC swiftly contradicts itself by noting that the United States is more likely to be attacked using nonmissile means because they are “less costly, easier to acquire, and more reliable and accurate.”⁵⁴ Setting aside this logical contradiction, it may be true that analysts do not associate reliability with deterrent value. However, if they do not, a weaker state could correct this misperception in various ways, including by conducting highly visible military exercises to demonstrate the efficacy of unconventional delivery means.

As with constructing a makeshift device, delivering a nuclear weapon clandestinely would pose significant challenges. Not least, shipborne bombs would be vulnerable to interdiction, and if the United States had intelligence that this mode of retaliation were being pursued, it would take extraordinary measures to defend itself. However, the intensity of this effort could not be sustained for long, and an adversary willing to wait months before retaliating would have a reasonable chance of succeeding. Even if the odds of success were objectively low, the stakes involved would demand worst-case scenario planning. Conservative leaders would have to assume that the bomber will always get through.

Deterrence and Self-Deterrence

If a source of reassurance exists that unconventional retaliation would not occur after a “splendid” first strike and that US nuclear threats still provide coercive leverage, it lies in the distinction between capability and intent. Simply because a state *could* retaliate in this manner does not mean that it would. For a variety of reasons, leaders may be self-deterred from retaliating—even if the means to do so were available and the justification ironclad. First, because these delivery means require counter-value targeting, that is, the mass killing of civilians, this option may not be considered palatable. Second, the weaker side might refrain from retaliating for fear of being annihilated in counterretaliation. If the stronger party believed that either of these considerations was prohibitive, it might still attempt coercion or outright attack, despite the weaker state’s possession of a latent nuclear capability. These factors must therefore be

carefully examined before a more complete judgment of the utility of US offensive capabilities can be rendered.

The Credibility of Countervalue Retaliation

In considering unconventional delivery means, most discussion of credibility centers on technical matters, such as whether shipborne weapons can escape interdiction. However, the deterrent value of this attack mode also hinges on credibility of a different sort—whether a decision to retaliate in this manner would really be made. The credibility of countervalue targeting has long troubled nuclear strategists who fear that threats to murder large numbers of noncombatants are simply not believable. This apprehension contributed in part to the adoption of counterforce targeting in US nuclear doctrine.

Whether this concern would apply to countervalue *retaliation* is unclear. China's nuclear strategy implicitly involves city destruction, given the limited quantity and accuracy of its long-range weapons. However, qualitative differences between missile attacks and unconventional delivery modes suggest that a discrete use calculation might apply. Not least, an indiscriminate attack against civilians weeks or even months after a provocation would seem particularly cold-blooded. Nonetheless, the credibility threshold for retaliation is presumably far lower than for initiating nuclear war, and one line of thinking in particular may permit recourse to countervalue strikes despite moral qualms about them.

Counterforce capabilities are the luxury of states that spend lavishly on offensive arms, whereas a minimalist posture is the strategy of a more restrained nuclear power. In the event of a nuclear attack, members of the latter group cannot in fairness be expected to refrain from their only available means of retaliating. This would amount to penalizing the victim for adopting a more stable and responsible nuclear posture than its aggressor. Thus, any civilian deaths that result from such a state's retaliation can be laid squarely at the feet of the initiator of the nuclear exchange.

There are at least two scenarios where the justification for countervalue retaliation would be difficult to deny: a preemptive nuclear attack on a state's strategic forces or a conventional invasion.⁵⁵ In these scenarios, nuclear retaliation might be permissible for the reason outlined above: the more powerful side cannot dictate the terms under which its aggres-

sion can legitimately be answered. Nonetheless, no amount of sophistry can obscure the barbarism of nuclear strikes on population centers. A state retaliated against in this manner may very well escalate, especially if its leaders viewed the precipitating attack as having had limited aims. Their reaction may take the form of a grossly disproportionate counter-retaliation—the fear of which constitutes a second potential source of self-deterrence.

The Influence of Escalation Dominance

For more than a half-century, strategists have speculated on the effect of significant nuclear imbalances during crises. In 1959 Bernard Brodie considered the following scenario: “Let us assume that a menaced small nation could threaten the Soviet Union with only a single thermonuclear bomb, which, however, it could certainly deliver on Moscow if attacked.” Brodie concluded that this capability would be “sufficient to give the Soviet government much pause.”⁵⁶ However, the possession of a deliverable weapon is only one ingredient in the recipe for nuclear deterrence. No less important is the aggressor’s belief that the defender will actually use it. The threat to do so is thought to lack credibility if the power differential between the two sides is too pronounced. In this circumstance, the stronger state may believe that it can conduct a limited attack—striking only military targets, for instance—while threatening an unrestrained attack on cities if the weaker state responds. This advantage is referred to as *escalation dominance*, which Forrest Morgan and his peers at RAND define as “a condition in which a combatant has the ability to escalate a conflict in ways that will be disadvantageous or costly to the adversary while the adversary cannot do the same in return.”⁵⁷ If an aggressor enjoys this position, the weaker state may be perceived—and perceive itself—as being unable to retaliate even if it has the technical means to do so. At least one nuclear-weapon state is known to have debated this dilemma, and the conclusion of its leaders appears to call into question Brodie’s verdict.

In the 1970s and 1980s, South Africa secretly developed six nuclear bombs, ostensibly to counter the threat from Soviet- and Cuban-backed rebels in Angola. However, some of its leaders doubted that these weapons could credibly deter a communist invasion. In this scenario, South Africa’s strategy called for a series of graduated signals to alert the Soviets

that it possessed nuclear weapons, culminating in an explicit threat to use them on the battlefield. Yet, there was no agreement on what to do if this threat failed. One South African official felt that it would be advisable at that point to “throw in the towel, and let the Soviet Union take us,” because to do otherwise would have been a “suicidal act.” The Soviets would have “every excuse then to actually attack us with nuclear weapons. . . . Then we would still lose, but we would destroy the country and the people as well.”⁵⁸

This anecdote seems to undercut the idea that a rudimentary deterrent is adequate against a much stronger nuclear power. It suggests that as long as a preemptive attack spares something that the weaker state values (for example, its cities or its leaders’ grip on power), that government cannot retaliate without fear of losing what remains. However, the fatal flaw in this logic is the assumption that leaders will always make rational decisions, even after suffering a national trauma. This is a condition that US decision makers could never take for granted. To resist coercion or deter an attack, the weaker side must simply create uncertainty about whether it would retaliate with nuclear weapons despite a great imbalance in strength. For a desperate or fanatic regime, this task would probably not be difficult. History is replete with vanquished governments fighting on after any prospect of victory had expired, and for cultures that place a high premium on “face,” absorbing counterretaliation might be preferable to the dishonor of failing to respond at all. Finally, if a first strike were to occur, the aggressor could not assume unitary decision making on the part of its enemy. Military commanders might retaliate without authorization, especially if communication with the central leadership had been cut off. Each of these possibilities should be sufficient to plant a seed of doubt in the minds of American leaders. Given their manifest risk intolerance, even the smallest uncertainty may effectively render US offensive nuclear forces unusable, and without the credible threat of their use, any attempt at nuclear coercion may in turn ring hollow.

Yet, if US leaders’ risk tolerance is indeed prohibitive and their self-deterrence correspondingly high, one might reasonably ask on what grounds counterforce capabilities should be considered dangerous. After all, these weapons are arguably destabilizing only if they are brandished or launched recklessly. However, it should not be assumed that American leaders are immune from cognitive dissonance, especially

under the enormous pressure of a nuclear crisis. It is quite possible they have not internalized the contradiction between their risk-averse counterterrorism and counterproliferation policies on one hand and the nation's footing for offensive nuclear war on the other. In a crisis, well-rehearsed nuclear war plans may assume a certain automaticity, in spite of leaders' obvious intolerance for risk in other domains. Further, a rational, considered decision to launch a first strike is not the only plausible scenario in which these weapons might be used.

A counterforce posture, especially when paired with a "launch on warning" policy, necessarily requires high launch readiness, imposing decision windows of perhaps 15–30 minutes upon receipt of satellite and radar warning of an incoming attack. The risk of a premature or mistaken launch under this model is self-evidently higher than under one designed to ride out a nuclear attack and retaliate with second-strike forces. Nor is the potential for miscalculation limited to a splendid counterforce attack. Consider a scenario presented by Austin Long and Brendan Green in which the United States enters into a limited conventional conflict with a nuclear adversary. In this circumstance, the enemy "would have strong incentives to try and secure their nuclear forces by dispersing them, delegating launch authority, or otherwise increasing readiness." If the United States were decisively winning, these authors suggest, "signs of [its adversary's] increasing readiness or weapons dispersal . . . would create dangerous windows of opportunity on the US side, as American troop concentrations, American allies, or even the American homeland could be potential hostages." Given such high stakes, they argue, "counterforce will likely have advocates in high circles during a crisis."⁵⁹

Far from endorsing these capabilities, this scenario illustrates that US counterforce systems would be the principal driver of the enemy's anxiety about losing its weapons in the first place. Further, movements to secure one's nuclear forces from attack may be mistaken for launch preparations, prompting a counterforce strike and transforming what had been a limited conventional war into a nuclear one. Moreover, the possibility that enemy weapons may prove elusive is no less relevant in this circumstance than in the case of a bolt-from-the-blue attack. As Michael Gerson notes of such a scenario, "In the end, if an attempted disarming first strike leaves some of the adversary's weapons intact, the United States may have started the nuclear war that it had hoped to prevent."⁶⁰

Implications for the United States

Ultimately, this analysis rests on inferences about the true risk tolerance of US leaders and the confidence of their adversaries in both resisting nuclear coercion and retaliating after a nuclear strike. Because neither of these variables can be established conclusively before a crisis occurs, there is room for disagreement about their potential implications. What should be uncontroversial, however, is that widely divergent perceptions of capability and resolve in a crisis may lead to catastrophic misjudgments.⁶¹ Additionally, there should be no doubt that such divergences exist.

Consider the multiple levels of perception that would be operative if the United States attempted nuclear coercion—much less a first strike. First would be US leaders' confidence in their counterforce capabilities, followed by the enemy's estimation of them. Next would be the enemy's confidence in its ability to retaliate after absorbing a counterforce strike and the United States' assessment of this probability. Beneath these first-order judgments are even more subjective evaluations: American leaders' perception of *the enemy's perception* of US first-strike capabilities, the enemy's perception of *US leaders' perception* of its retaliatory capability, and so on. Mistaken assumptions in any one of these dimensions could result in grave errors. For example, if US leaders are so enamored of their first-strike capabilities that they perceive little risk of retaliation, the threshold for launching a preemptive attack—or merely engaging in nuclear coercion—might be dangerously low. Indeed, this prospect has not escaped foreign strategists. Chinese analysts Li Bin and Nie Hongyi have noted that the limitations of US offensive forces are “not clear enough” to American leaders, creating the possibility that they “may think they have” the capability to neutralize China's retaliatory forces. According to Li and Nie, the Americans' “blind confidence” might give rise to attempts at nuclear saber rattling or worse.⁶² Compounding this danger is the possibility that a state subjected to American coercion may believe just as strongly in its own capacity to retaliate. Moreover, if either side believes that the other privately shares its own assessment, they may fatally misjudge the robustness of deterrence. In particular, foreign leaders may take at face value US rhetoric on nuclear terrorism and conclude that the ability to deliver a single bomb is sufficient to deter the United States. In this circumstance, they may discount the gravity of American threats even if they are quite sincere.

Because US offensive capabilities are the chief source of these potential risks, the responsibility arguably falls to the United States to minimize them. One doctrinal option is simply to limit offensive nuclear forces exclusively to damage-limitation roles, that is, reducing the brunt of an enemy attack when it is not merely likely but imminent or under way. Striking first in this scenario requires no great tolerance for risk, because some level of damage is inevitable, and preemption merely reduces that damage as much as possible. However, this option would leave counterforce capabilities intact, offering no assurance that American leaders would forswear preemptive attacks in less than dire circumstances. The most effective means of preventing nuclear aggression—and the terrible risks entailed—is to dismantle counterforce capabilities altogether.

Rejection of Counterforce Targeting

The belief that strategic stability requires the capacity to hold an enemy's nuclear forces at risk is canonical in US nuclear doctrine.⁶³ However, the logical foundation of this axiom has never been firm. Because counterforce capabilities nourish the reciprocal fear of a surprise attack, their effect during crises may be inherently destabilizing. A state's anxiety over losing its weapons only encourages their precipitate launch, and its enemy's anticipation of this mind-set incentivizes attempts to disarm those weapons first. If neither side could target the other's strategic forces, no such "use or lose" pressures would exist.

The case against counterforce need not be confined to the theoretical realm, however. Well-documented historical episodes illustrate the disconnect between this strategy and national leaders' enthusiasm for employing it. During the 1961 Berlin crisis, Pres. John F. Kennedy considered a first strike against Soviet nuclear forces based on a plan that had been drafted earlier that year. US satellites had revealed that the USSR possessed only *eight* ICBMs, presenting the alluring prospect of a disarming attack. However, even this miniscule retaliatory force was sufficient to discourage Kennedy, who lacked confidence that the Soviet weapons could be completely neutralized.⁶⁴ As Fred Kaplan reflects on the incident, "even in those halcyon days of 'strategic superiority,' the most determined American officials, who had firmly believed in the counterforce strategy in theory, did not even contemplate taking the awesome risk of executing the strategy in practice."⁶⁵ Strangely, this epi-

sode and others like it occasioned no fundamental reevaluation of the US targeting strategy. More than 50 years later, the US nuclear posture is still configured for counterforce strikes, even against states with whom the numerical balance is much less favorable than it was against the Soviets early in the Cold War.

A US nuclear posture that is more consistent with its leaders' tolerance for risk would designate these weapons for an exclusive purpose: deterring a nuclear attack on the United States or its allies with the threat of countervalue retaliation. Many strategists have an allergy to this concept because they consider the presumed targets of these strikes—enemy cities—morally impermissible and the threat to destroy them incredible.⁶⁶ However, states do not face a binary choice between targeting missile silos and annihilating civilians. There is a “third way” that removes the dangers of counterforce targeting, while minimizing the collateral damage of countervalue attacks. This doctrine, which Hans M. Kristensen, Robert S. Norris, and Ivan Oelrich term “infrastructure targeting,” would hold at risk critical national assets such as energy nodes, transportation hubs, and fuel refineries.⁶⁷ Destroying these targets could seriously threaten an enemy's economy and national cohesion without the instability of counterforce strategies or the moral outrage of targeting population centers. Of course, many infrastructure targets are located in close proximity to urban areas, and it is impossible to adopt a targeting posture that completely spares civilians. Indeed, counterforce targeting, despite its emphasis on military assets, also entails substantial civilian casualties because deadly fallout from a massive attack would cover a wide geographic area. Ultimately, however, the criterion that should commend a targeting posture is not the number of civilian deaths it would produce on paper or whether these deaths are intended or collateral. Rather, the most salient quality is whether the posture increases or decreases stability, and a countervalue model is arguably superior in this respect.

Steep Reductions in Nuclear Warheads

Rejecting counterforce targeting would yield many additional benefits beyond shielding leaders from their own risky decision making. Not least of these would be a steep drop in the size of the US arsenal, the overwhelming driver of which is the abundance of military targets in

Russia. Eliminating the requirement to destroy these assets would limit the number of enemy aim points to a fixed set of infrastructure targets, which would substantially reduce warhead needs. As part of this doctrinal shift, the United States could also phase out its silo-based ICBMs, an idea that is rapidly gaining in respectability. Indeed, a panel led by Gen James Cartwright, former commander of US Strategic Command, recommended in 2012 that these weapons be retired.⁶⁸

Eliminating the land-based leg of the triad would occasion great handwringing, but it would hardly constitute the most radical policy of the nuclear age. Certainly more psychologically discomfiting was the Anti-Ballistic Missile Treaty, which hinged on the counterintuitive notion that the United States and the Soviet Union could improve their security by preserving their defenselessness to nuclear attack. And of course a diverse group of nuclear practitioners, including many senior military leaders, has embraced nuclear abolition. Relative to these ideas, it seems distinctly uncontroversial to suggest retiring weapons that pose enormous risks to strategic stability and are of questionable military utility.

Beyond debates about the value of any particular weapon system, a more fundamental objection to steep warhead cuts is the conviction that nuclear superiority translates directly into coercive leverage. Matthew Kroenig, for example, argues that states that possess numerical superiority in weapons have correspondingly higher levels of effective resolve, which in turn causes them to “push harder in a nuclear crisis, improving their prospects of victory.”⁶⁹ Yet, this phenomenon may argue *against* nuclear imbalances for the reason identified earlier. In crises where states fundamentally misperceive each other’s tolerance for risk, the result of overconfidence may not be dominance but rather catastrophe.

De-emphasis of Nuclear Weapons in US Security Policy

Finally, adopting a countervalue strategy would enable a range of policies that circumscribe the role of nuclear weapons in US security policy, a goal that President Obama articulated in Prague.⁷⁰ First, the United States could comfortably adopt a pledge not to be the first to use nuclear weapons in a conflict. While US doctrine lists a range of potential first-use scenarios—for example, targeting deeply buried biological weapons facilities—these are mere garnishes to the primary mis-

sion of US strategic weapons: preemptively destroying enemy nuclear forces. If the limitations of this strategy were appreciated more widely and US doctrine modified accordingly, the chief impediment to adopting a no-first-use pledge would be greatly attenuated. Additionally, deployed warheads could be maintained at lower states of alert, which many senior leaders believe even now to be far out of proportion to the nation's deterrence needs.⁷¹

Coupled with warhead reductions, changes to US targeting policy could influence foreign decision making by reassuring America's rivals that they do not need formidable nuclear forces to deter the United States. While it is important not to overstate the responsiveness of foreign nuclear programs to American policies, it is not implausible that US doctrinal adjustments could have cascading effects. Consider the interlocking nature of the world's nuclear deterrence relationships, where Russia and the United States must deter each other, China must deter them both as well as India, India must deter China and Pakistan, and Pakistan must deter India.⁷² A fundamental change to the targeting policy of the most powerful of these states could lead to a steep downward revision in the commonly accepted requirements of nuclear deterrence. Even if Russia's targeting policy remained unchanged, countries that have not yet developed robust counterforce capabilities, such as China, India, and Pakistan, might be persuaded not to pursue them in the first place.

Recognizing the difficulty of making such sweeping reforms to the US nuclear posture, as well as the enduring allure of the counterforce option in some scenarios, it may be necessary to consider more modest changes to reduce the danger of catastrophic misperceptions. Ideally, these reforms would address both sides of the underlying problem—the consequences of signaling the United States' low damage tolerance and the intrinsic dangers of the counterforce model itself. Regarding the former, US leaders should consciously avoid rhetoric in other contexts that gives the impression of their extreme sensitivity to nuclear threats. Whether sincere or exaggerated, these statements may invite boldness on the part of adversaries in a crisis, undermining the US bargaining position. Although signaling that the United States is perfectly willing to gamble its cities may lack credibility, at the very least US leaders should refrain from messaging that reinforces the opposite position.

Likewise, if the United States is unwilling to relinquish its counterforce capabilities, initiatives can still be taken to manage the risk of their imprudent use. First, nuclear practitioners should be made to understand that the United States' coercive leverage in nuclear crises may have been compromised by its leaders' rhetoric and policies in other arenas. Injecting this concept into war games and scenario analysis may increase their appreciation of a potent source of adversary resolve. Most importantly, US nuclear war planning should be made less myopic in its focus on deployed, long-range weapons and take into account the potential for delayed retaliation, including with unconventional delivery means. Consideration of these possibilities may not foreclose counterforce targeting altogether, but it may make decision makers more circumspect about the likelihood of a completely disarming first strike.

Conclusion

More than 30 years ago, Thomas Schelling posed the question, what is meant by "having" the bomb? He suggested that in a decade or two, most countries would "have" nuclear weapons in the sense that Switzerland has an army—a latent military capability that can be quickly constituted in an emergency. Schelling reasoned that it made more sense to characterize many states' nuclear weapon status "not with a yes or a no but with a time schedule."⁷³ Since then, the idea of "weaponless deterrence" has been at the center of the intellectual case for nuclear disarmament.

Advocates of this controversial model believe that strategic stability can be underwritten by latent nuclear capabilities rather than constituted arsenals and that states with a certain level of nuclear capacity would reap the deterrent value of these weapons without actually possessing them. This condition would arise from the maintenance of a nuclear infrastructure complete with knowledge of nuclear weapon design and access to fissile material. Sweden, for example, maintained a latent nuclear capability for many years by virtue of a deeply buried 65-megawatt reactor capable of producing plutonium and a small cadre of physicists with weapon-design expertise.⁷⁴ An adversary weighing aggression against such a state would have to consider its theoretical capacity to retaliate with nuclear weapons, albeit on a much slower schedule.

Many skeptics consider weaponless deterrence to be a fanciful ambition, but the crucial seed of the model may already exist. According to Obama administration official Laura Holgate, some 40 countries already have enough nuclear material to produce a “Hiroshima or a Nagasaki-type explosion.”⁷⁵ Coupled with evidence that the threat of damage on this scale may be enough to deter even the strongest world power, perhaps weaponless deterrence is less utopian than is commonly supposed. Yet, even if the interval between the status quo and that distant aspiration is ultimately a bridge too far, the insight at the heart of this model may nonetheless call for a wholesale reevaluation of nuclear strategy. If delayed retaliation on a relatively small scale is indeed sufficient to deter, the use or threatened use of counterforce capabilities should be greatly limited whether these systems are dismantled or not.

Ascertaining the United States’ maximum damage tolerance, and hence its potential resolve in a crisis, is difficult in the abstract. A useful starting point would be to press US leaders to explain the logical contradictions embedded in US nuclear policy. This exercise may lend credence to the idea that, from the perspective of a state contemplating nuclear aggression, an opponent’s mere possession of fissile material may meet the most fundamental requirement of deterrence. ■■■

Notes

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5. I am indebted to Joshua Pollack for this insight.

6. See Paul A. Samuelson, "Consumption Theory in Terms of Revealed Preference," *Economica* 15, no. 60 (November 1948): 243–53. I am indebted to Joshua Pollack for bringing this term to my attention.

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9. See Ariana Rowberry, "Sixty Years of 'Atoms for Peace' and Iran's Nuclear Program," *Up Front* (blog), Brookings Institution, 18 December 2013, <http://www.brookings.edu/blogs/up-front/posts/2013/12/18-sixty-years-atoms-peace-iran-nuclear-program-rowberry>; and Leonard Weiss, "Atoms for Peace," *Bulletin of the Atomic Scientists* 59, no. 6 (November 2003): 34–42.

10. Sam Roe, "An Atomic Threat Made in America," *Chicago Tribune*, 28 January 2007, <http://www.chicagotribune.com/news/nationworld/chi-061209atoms-day1-story.htmlstory.html>.

11. George W. Bush, "Bush: Don't Wait for Mushroom Cloud," *CNN* transcript, 8 October 2002, <http://edition.cnn.com/2002/ALLPOLITICS/10/07/bush.transcript/>.

12. Bruce G. Blair and Chen Yali, "The Fallacy of Nuclear Primacy," *China Security* 2, no. 4 (Autumn 2006): 51–77.

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17. See US Department of Defense (DOD), *Nuclear Posture Review Report* (Washington, DC: DOD, April 2010), iii; and Barack Obama, "Remarks by President Barack Obama in Prague as Delivered" (press release, Office of the Press Secretary, White House, 5 April 2009),

<https://www.whitehouse.gov/the-press-office/remarks-president-barack-obama-prague-delivered>.

18. Herman Kahn, *On Thermonuclear War* (Princeton, NJ: Princeton University Press, 1960), 32.

19. Kenneth Waltz, "The Spread of Nuclear Weapons: More May Be Better," *Adelphi Papers* 21, no. 171 (1981): 15–16.

20. Devin T. Hagerty, "Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis," *International Security* 20, no. 3 (Winter 1995–1996): 79–114.

21. Keir A. Lieber and Daryl G. Press, "The Rise of U.S. Nuclear Primacy," *Foreign Affairs* 85, no. 2 (March–April 2006): 42–54.

22. Keir A. Lieber and Daryl G. Press, "The Nukes We Need: Preserving the American Deterrent," *Foreign Affairs* 88, no. 6 (November–December 2009): 39–51.

23. Keith Payne, "A Matter of Record," *Foreign Affairs* 85, no. 5 (September–October 2006): 150–52.

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44. Ashley J. Tellis, "India's Emerging Nuclear Doctrine: Exemplifying the Lessons of the Nuclear Revolution," *NBR [National Bureau of Asian Research] Analysis* 12, no. 2 (May 2001).
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NATO's Readiness Action Plan

Strategic Benefits and Outstanding Challenges

John-Michael Arnold

Abstract

In response to the reemergence of Russian military assertiveness and the rise of the Islamic State, the North Atlantic Treaty Organization (NATO) unveiled a major initiative—the Readiness Action Plan (RAP)—at its September 2014 summit in Wales. With only a few months until the next NATO summit in Warsaw, Poland, now is an opportune time to evaluate the RAP and the steps taken to implement it so far. This article argues that, despite the limited scale of some of its measures, the RAP offers four major strategic benefits, which collectively outweigh its drawbacks. Even so, its effectiveness faces a series of significant challenges. To address them, there are nine policy recommendations NATO leaders should consider before they convene in Warsaw in July 2016. These recommendations are designed to allow the RAP to achieve the benefits it promises, thereby bolstering NATO's ability to protect its members from aggression and to allow the alliance to respond effectively to crises.



Two major surprises confronted NATO members in 2014. First, through its aggression in Ukraine, Russia repudiated the idea that Europe's post-Cold War borders are settled and should not be adjusted through force. Russia's adherence to that norm was already questionable

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given its 2008 invasion of Georgia and subsequent recognition of independence for Abkhazia and South Ossetia. But, the Kremlin's actions in 2014 went even further since it formally annexed Crimea rather than just recognizing its independence. Meanwhile, even beyond Ukraine, Russia dramatically increased its military assertiveness, showcasing its conventional power and rattling its nuclear saber.¹

Second, the Islamic State of Iraq and the Levant (ISIL) redrew a sizeable part of the Middle East's map. It captured vast tracts of territory in Syria and Iraq, before declaring the establishment of an Islamic caliphate in late June 2014.² Since then, the group has perpetrated extreme violence, beheaded numerous hostages, implemented harsh sharia law in territories under its control, and attracted thousands of recruits from across the world.³

In response to these two crises, at its September 2014 summit in Wales NATO unveiled a major effort—called the Readiness Action Plan (RAP)—to improve the alliance's capacity to deter and defend against aggression toward NATO members and to bolster the organization's ability to respond to fast-moving crises, regardless of their origin. The RAP comprises a series of initiatives, notably including the establishment of a new "spearhead" unit able to deploy swiftly, increased military presence along the alliance's eastern flank, and an enhanced schedule of exercises focused on collective defense.

Following the Wales meeting, some international security experts argued that NATO's RAP did not go far enough given the scale of the challenges the alliance witnessed in 2014. For example, Jakub Grygiel, a professor at Johns Hopkins' School of Advanced International Studies, stated that the Wales meeting "had more of a rhetorical than practical impact."⁴ Meanwhile, Gary Schmitt of the American Enterprise Institute bemoaned the limited scale of the alliance's new measures: "The upped presence has been marginal in terms of numbers; the high-readiness force being created is limited in size, and the training exercises still pale in comparison with the scale of the exercises that have been conducted by the Russian military."⁵

These criticisms have some merit. It is true, for example, that the additional manpower NATO nations have sent to the alliance's eastern flank only numbered in the hundreds, much lower than the 10,000 troops the Polish government had requested prior to the Wales conference.⁶ NATO's new spearhead force, the Very High Readiness Joint

Task Force (VJTF), only comprises 5,000 personnel, and its incredibly clunky name does little to connote nimbleness. Meanwhile, NATO's recent military exercises have indeed been much smaller than Russia's.

Nevertheless, NATO's RAP should not be dismissed as irrelevant. Though the initiative has its downsides, wide-ranging strategic benefits outweigh those disadvantages. Additionally, the decisions taken at Wales were the beginning, rather than the end, of a process. Now is a propitious time to assess the RAP's value. It has been a year and a half since the Wales summit, affording observers the opportunity to judge what the action plan offers and what it has achieved so far. There are only a few months until the next NATO summit, which convenes in Warsaw in July 2016. Thus, NATO leaders have time to prepare to make decisions in Poland and refine the RAP so it is as strategically beneficial as possible.

This article first reviews the contents of the RAP. Subsequently, it argues that the package has four major strategic benefits and identifies the major challenges associated with the RAP's various initiatives. The final section presents nine policy recommendations intended to meet those challenges and that NATO leaders should consider implementing between now and the Warsaw Summit.

NATO's Readiness Action Plan: The Wales Summit and Beyond

Responding to concerted Russian aggression is a task many NATO leaders hoped they would never have to undertake. The alliance's 2010 *Strategic Concept* stated that, "we want to see a true strategic partnership between NATO and Russia."⁷ But, by the time leaders arrived in south Wales in September 2014, any hope of creating a true strategic partnership with Russia lay buried under the blood-soaked ground of Ukraine's Donbas region.⁸

Although Russia was the primary focus of the meeting, NATO leaders were acutely aware of the need to rethink how the alliance deals with a range of security challenges, including those that might affect NATO's southern region. Several days before the meeting, NATO Secretary-General Anders Fogh Rasmussen emphasized, "This is a time of multiple crises on several fronts. To the east, Russia is intervening overtly in Ukraine. To the south, we see growing instability, with fragile states,

the rise of extremism, and sectarian strife. These crises can erupt with little warning. Move at great speed. And they all affect our security in different ways.”⁹

The RAP was the most significant announcement made in Wales and aims to ensure that “NATO remains a strong, ready, robust, and responsive Alliance capable of meeting current and future challenges from wherever they may arise.”¹⁰ It includes a series of major efforts:¹¹

- **Establishment of the VJTF.** This will be the “spearhead” unit of the larger NATO Response Force (NRF) and is designed to be deployable within 48 hours of an order to do so.¹² The VJTF comprises 5,000 ground troops, which will be provided by NATO members on a rotational basis and will remain stationed in their home countries. The various components of the force will be brought together as needed following a deployment order.¹³
- **Continuous air, land, and maritime presence in the eastern part of the alliance on a rotational basis.** This initiative is designed to reassure allies on NATO’s eastern flank, while deterring any Russian threats against them. By deploying such forces on a rotational basis, NATO will continue to abide by the letter of the NATO–Russia Founding Act of 1997, in which the alliance agreed that it would refrain from the “additional permanent stationing of substantial combat forces.”¹⁴
- **Creation of command-and-control elements and prepositioned equipment for the VJTF in eastern allied nations.** To facilitate swift deployment of the VJTF, the alliance will create NATO Force Integration Units (NFIU), which are command-and-control and “force reception” facilities in member states in the eastern part of the alliance. NFIUs are currently being established in Bulgaria, Estonia, Latvia, Lithuania, Poland, and Romania.¹⁵ They will identify logistical networks and transportation infrastructure that the VJTF can use to deploy to a member state rapidly.¹⁶
- **An enhanced exercise program.** As well as an increase in the number of alliance exercises, leaders committed to ensuring a stronger focus on exercising collective defense.¹⁷
- **Agreement to reverse the trend of declining defense budgets within the alliance.** Allies already meeting NATO’s target to spend two percent of their gross domestic product on defense made a

commitment in Wales that they would continue to do so. Meanwhile, those allies failing to meet the guideline agreed to move toward the target within a decade.¹⁸

Since the meeting, NATO has begun implementing these initiatives. Seven developments undertaken since Wales are especially significant. First, NATO has indeed bolstered its military presence in the alliance's eastern member states, as well as having increased the size and frequency of military exercises. The US Army has been deploying units of 150 soldiers to each of Poland, Lithuania, Latvia, and Estonia and announced that it would maintain a "persistent"—rather than permanent—presence along the alliance's eastern flank.¹⁹ The United Kingdom has announced that it will also undertake a persistent presence mission in the Baltic States; the overall British contribution will be 100 military personnel.²⁰ In March 2015, 600 personnel and 120 vehicles from the United States' 2nd Cavalry Regiment completed a road march of 1,800 kilometers across Estonia, Latvia, Lithuania, Poland, the Czech Republic, and Germany, vividly demonstrating the United States' ability to move armored forces across Eastern Europe.²¹ Meanwhile, in September 2015 personnel from the US Marine Corps began a series of rotational deployments to Bulgaria; at least three deployments are planned over a period of 18 months.²²

In May 2015, Estonia hosted an exercise that saw 13,500 troops deployed from across the alliance.²³ In June, NATO conducted the two-week Baltops exercise, which involved 49 vessels from 17 countries and a total of 5,900 personnel. It culminated with the staging of a practice amphibious landing at Ustka, Poland, only 100 miles west of Russia's strategic exclave of Kaliningrad.²⁴ In late October, NATO held Trident Juncture, the alliance's largest exercise in over a decade. It involved 36,000 personnel and took place in the Mediterranean region.²⁵ For its part, Russia has pointedly conducted even larger military exercises recently, including one in March 2015 that included the participation of 80,000 personnel.²⁶

Second, the Supreme Allied Commander, Europe (SACEUR), Gen Philip Breedlove, USAF, declared NATO's VJTF to be operational in June 2015. That announcement was made at the completion of the Noble Jump exercise in Poland, which was the first time the spearhead force deployed and conducted maneuvers.²⁷

Third, the United States is in the process of pre-positioning equipment, armored vehicles, and heavy weapons for up to 5,000 American troops in several Eastern European and Baltic countries. It is the first time that the United States has permanently stationed such equipment in NATO member states that were formerly part of the Soviet sphere.²⁸ Adm James Stavridis, US Navy, retired, a former SACEUR, described the decision as a “very meaningful shift in policy.”²⁹

Fourth, the United States announced that it will contribute a slew of “enabling capabilities” to facilitate the VJTF’s operations, including strategic and intertheater lift; intelligence, surveillance, and reconnaissance (ISR) assets; special-operations capabilities; command and control; and logistical assets.³⁰ The announcement reflects an implicit intra-alliance division of labor. A group of European NATO members will provide the ground personnel for the VJTF, while the United States provides necessary supporting capabilities.

Fifth, to minimize the time needed to deploy the VJTF, in June 2015 NATO members granted the SACEUR authority to “alert, stage, and prepare” troops that are part of the force.³¹ The SACEUR must still wait for a political decision by the North Atlantic Council (NAC) before actually deploying the taskforce, but the new powers allow the NATO commander to order that the component forces begin preparing for action so they are ready to move upon the NAC’s approval.³²

Sixth, that same month, the alliance decided to increase the total size of the NRF to 40,000 personnel, up from a previous level of 13,000.³³ Announcing that change, the secretary-general stated, “We have just taken another step forward in adapting NATO to our changed and more challenging security environment.”³⁴ The NRF, originally created in 2002, provides capabilities for a variety of tasks, including collective defense, crisis management, peace support operations, and disaster relief.³⁵ As noted, the VJTF has been established as part of the larger NRF structure. The VJTF will be able to deploy before other components of the NRF, which can then reinforce the spearhead unit after it has begun operations.

Seventh, several NATO members have announced plans to maintain or increase the amount of resources they commit to defense. In July 2015, the British government confirmed that the United Kingdom would continue to reach the target for the rest of the decade, allaying fears that it would fall below the goal as a result of government spending

cuts.³⁶ Germany's government plans to increase defense spending by 6.2 percent over the next five years.³⁷ Meanwhile, Poland attained membership in the two-percent club during 2015.³⁸ Additionally, the Czech Republic has announced that its defense spending will increase by 75 percent over the period between now and 2020.³⁹

The Strategic Benefits of the Readiness Action Plan

Critics of NATO's recent reform efforts have argued they do not go far enough.⁴⁰ For example, how could a spearhead force of 5,000 personnel, or the persistent deployment of 600 American troops to NATO's eastern flank, ever do much against Russia's military machine? After all, Russia has demonstrated its ability to mass large numbers of troops very quickly. In March 2015, Lt Gen Ben Hodges, the US Army's most senior officer in Europe, remarked, "I've been watching the Russian exercises . . . what I cared about is they can get 30,000 people and 1,000 tanks in a place really fast. Damn, that was impressive."⁴¹

However, the RAP offers at least four major strategic benefits, even though NATO officials have not explicitly stated them in these terms. Instead, these benefits emerge by thinking through the logic of the RAP's various components and considering the assumptions, sometimes left unspoken by Western leaders, which underpin its initiatives. By explicating the *potential* strategic effects offered by the RAP, one can assess how far its implementation has positioned the alliance to reap those benefits. Relatedly, we can identify the remaining challenges NATO faces in achieving the RAP's full potential.

Benefits of the RAP

The four benefits offered by the RAP can be summed up as: deterrence, defense, depth, and deliverables. Each of these, in turn and together, each illustrates why the RAP should be taken seriously and not be hastily dismissed.

The Deterrence Benefit

In the 1950s Glenn Snyder introduced a distinction between two types of deterrence: that achieved through the threat of punishment and that effected through denial.⁴² Deterrence by threat of punishment seeks

to convince an adversary to refrain from a particular action by threatening to inflict costs on the adversary—should it nevertheless proceed—that outweigh the value the adversary attaches to the prospective gain.⁴³ The credible threat of nuclear retaliation in response to aggression is an example. Contrastingly, deterrence by denial is built upon military forces whose function is chiefly to contest the control of territory and population.⁴⁴ That is, deterrence by denial aims to convince an adversary to refrain from an action by credibly threatening to defeat, through one's own assets, an adversary's effort to pursue the action successfully. Following the Ukraine crisis, NATO has reexamined its ability to deter possible Russian aggression against its member states. The RAP primarily strengthens NATO's capacity for deterrence by punishment, with some small benefits offered to its capacity for deterrence by denial.

The enhanced military presence and greater frequency of exercises in NATO's eastern member states mean that personnel throughout the alliance will, for the foreseeable future, be on the ground in NATO states bordering Russia. The critics are quite correct: the numbers involved are small. But, so was the size of the American deployment in West Berlin during the Cold War, relative to the number of Warsaw Pact troops that could have overrun the city. As Thomas Schelling famously pointed out, "The garrison [of American troops] in Berlin is as fine a collection of soldiers as has ever been assembled, but excruciatingly small. What can 7,000 American troops do, or 12,000 Allied troops? Bluntly, they can die. They can die heroically, dramatically, and in a manner that guarantees that the action cannot stop there."⁴⁵

The Berlin garrison provided the famous trip-wire deterrent.⁴⁶ If the Warsaw Pact had invaded West Berlin its advance would have led to the deaths of American personnel. In that scenario, no American president would be able to withstand—even if they had wanted to—the overwhelming domestic pressure to retaliate against the Soviet Union, including through the use of nuclear weapons. Since the Soviet Union, presumably, wanted to avoid such a war, the American garrison represented a strong contribution to deterrence by punishment.⁴⁷

Of course, proving in any given situation that deterrence has worked or is working poses a tough methodological problem. We cannot conclude that an adversary has been deterred simply because it refrained from aggressive action. After all, it may have never actually had any intention of undertaking such action.⁴⁸ Notwithstanding that challenge, there is

a strategic logic for why the *increased* presence of alliance personnel in eastern NATO states makes it *more likely* that NATO's deterrence by punishment will work. It means that any Russian aggression against an eastern member of NATO would run the risk of killing personnel from countries across the alliance. Assuming that in such a scenario NATO members would be more likely to live up to their Article 5 commitments than would be the case if only Baltic citizens were killed through Russian actions, increased presence should act to enhance deterrence.⁴⁹

The VJTF further bolsters NATO's deterrence-by-punishment capacities. The ability to move the unit quickly to any member of the alliance provides NATO with what Martin Zapfe terms a "mobile trip wire."⁵⁰ For example, if the NATO alliance believed Russia was readying itself to launch offensive operations—whether of the conventional or hybrid variety—against a NATO member state, the VJTF could deploy to the threatened country as a way of laying a trip wire.

Persistent presence and the mobile trip wire can only be credible instruments of deterrence by punishment if the alliance is actually willing and able to impose the associated punishments in the face of aggression. Understandably, NATO leaders will be reluctant to employ nuclear first use for purposes of either punishment or denial. But, deterrence by punishment does not necessarily have to rely upon nuclear punishments. Instead, it requires that the punishment imposes costs on an adversary that are greater than the adversary's valuation of the gains through action. Thus, conventional actions against high-value military targets or severe economic sanctions could provide means of deterrence through punishment provided the costs to the adversary outweigh the gains from aggression.

The Defense Benefit

If NATO's deterrence against Russian aggression were to fail—for example if Russian president Vladimir Putin calculates that he can launch operations against a NATO member while avoiding killing members of NATO units rotating through that country—then the RAP also offers NATO additional abilities to defend against Russian aggression. It is correct that 5,000 members of the VJTF will not be able to defeat a large-scale conventional attack by tens of thousands of Russian troops against a NATO member. But, if Putin has designs on NATO members, he would likely look for ways to capture NATO territory without resort-

ing to such a flagrant attack. After all, he would likely calculate that the more outrageous a Russian breach of a NATO member's sovereignty is, the greater the risk Russia runs of an all-out confrontation with the alliance. Therefore, Putin would most likely be looking for ways to "salami slice" his way to gains against NATO, including the use of so-called "little green men" like those who were deployed to such considerable effect in Crimea.⁵¹

Against this type of operation, NATO's VJTF offers real capabilities. Five thousand well-trained NATO troops deployed rapidly could offer a member state meaningful advantages if it found itself combatting moderate numbers of Russian personnel operating below the threshold of conventional invasion. If the VJTF could do enough to stymie Russia's gains, then other components of the NRF could subsequently reinforce the spearhead unit, providing additional defensive capabilities. Furthermore, NATO's enhanced exercise program offers the alliance the opportunity to rehearse how it would defend against Russian hybrid operations and to think through the appropriate force composition of the VJTF to allow it to defend against unconventional warfare threats. In particular, exercises will allow NATO to develop plans for using the VJTF to augment the forces of eastern members in efforts to counter hybrid war scenarios.

Since the spearhead force offers some defensive capabilities against so-called Russian hybrid operations—thereby raising the costs of such actions to the Kremlin—it also contributes to deterrence by denial against *those* types of moves. That said, the scale of personnel deployments in the eastern alliance region—as well as the amount of pre-positioned equipment to be stored there—would be insufficient to counter any large-scale Russian conventional attack. In that sense, the RAP opts primarily to enhance deterrence by threat of punishment rather than deterrence by denial.

The Benefit of Depth

The RAP also offers the possibility of increasing the alliance's strategic depth, allowing it to respond simultaneously to crises on its eastern and southern flanks. The coincidence of Russia's renewed assertiveness with the rise of ISIL underscored the benefits to NATO of having such a capability. Indeed, Russia could, in the future, attempt to exploit NATO's

preoccupation with a crisis on its southern flank by choosing that moment to undertake action against a NATO member in the east.

NATO has a “level of ambition” of being able to provide command and control for two major joint operations and six smaller operations at any given time.⁵² Although NATO officials have not explicitly stated that the RAP offers the alliance a path to building the capacity for responding to two crises simultaneously, the initiative’s implicit division of labor suggests that possibility. Specifically, with proper preparation, the VJTF could be used to respond to a challenge on one of NATO’s flanks, while the United States—using its forces in Germany and Italy—could respond to a challenge on the other flank. For example, in the event of simultaneous crises, the VJTF could be moved to one of the Baltic nations to fulfill its mobile trip-wire role, while American forces in Europe respond to a contingency in the Middle East that is deemed to threaten NATO members. Of course, realizing this theoretical possibility depends upon the United States being able to furnish supporting capabilities for the VJTF, while also having the capacity to support separate operations by its own ground personnel. That challenge will be discussed in greater detail below.

The Deliverables Benefit

The final rationale underpinning the RAP is that it has given NATO members some clear deliverables for what they should be able to achieve with their defense spending. As John Deni has argued, the two-percent spending guideline is not adequate for conveying what defense investments NATO states should be making.⁵³ For example, he notes that Greece has routinely met the two-percent target, even though the country does not have a highly deployable military. By contrast, Denmark has regularly fallen short of the two-percent guideline, but its forces are much more deployable.⁵⁴

Although the Wales summit saw member states renew their pledges to the two-percent target, the language used in the summit communiqué—which talked about moving toward the goal within a decade—did not inspire much confidence in swift progress. Understandably, many will have interpreted the promise as an artful way of saying the alliance has no real intention of meeting the target. Nevertheless, much more positively, the RAP gives NATO member states some concrete deliverables in the shorter-term, notably including the 48-hour target for the VJTF.

Therefore, even while member states should be held to their two-percent commitment over the long term, they also have nearer-term obligations to ensure their forces are sufficiently deployable and maintained at appropriate readiness to make the VJTF's promised capabilities a reality.

The Remaining RAP Challenges

The decisions NATO leaders announced in Wales and have begun implementing are welcome since they potentially offer the strategic benefits set out above. But, notwithstanding the commendable progress made so far, there are numerous challenges associated with NATO's recent reforms. Cumulatively, these will serve to constrain the alliance's ability to respond quickly and effectively to future crises. Nine issues are especially significant and are elaborated below.

Enhanced Presence on the Eastern Flank Is Mainly Provided by the United States

Although European ground troops have taken part in recent exercises on the alliance's eastern flank, the additional ground presence in the area is being provided primarily by the United States, alongside a persistent contribution from the United Kingdom.⁵⁵ After European ground personnel participated in recent exercises, they returned home. The boost to NATO's deterrence through punishment is less than would be the case if additional European nations joined the United States and the United Kingdom in the persistent presence mission. Steven Pifer of the Brookings Institution describes the challenge clearly: "Mr. Putin seems intent on challenging the alliance. The dearth of European boots on the ground might lead the Kremlin to a dangerous conclusion: that important allies might not be prepared to carry out their commitment under NATO's Article 5 to defend the Baltic states. The consequences could be disastrous."⁵⁶

The Speed of NATO's Political Decision Making

The ability of the VJTF to act as a mobile trip wire and as a defensive force relies upon its ability to move rapidly. If it cannot move soon enough to deter impending action, then it cannot be used as a trip wire. In that case, it can still serve a role as a defensive force, provided it can deploy quickly enough to blunt any Russian attack.

The authority to deploy the VJTF resides with the NAC, comprising representatives of all 28 NATO members.⁵⁷ NATO has developed a customary practice under which political decisions, including resort to the use of force, require consensus in the NAC.⁵⁸ That requirement does not mean NATO's decision making is fated to be slow in every instance. Most notably, it took less than 24 hours for alliance members to invoke Article 5 in the aftermath of 9/11.⁵⁹ But, faced with cases of less stark aggression, the need for consensus might slow the alliance response.

Senior NATO leaders are well aware of this problem. Secretary-General Jens Stoltenberg has pointed out that "it doesn't help to have a force which is ready to move within 48 hours if we need 48 days to take a decision to make it move."⁶⁰ NATO's decision to delegate to the SACEUR the authority to alert and stage the VJTF is a commendable step in shortening crisis response times, but it does nothing to address the potentially significant amount of time that might be needed for the NAC to reach consensus.

The Downsides of a Mobile Trip Wire

While the lack of participation by European ground personnel in the new persistent presence mission weakens NATO's static trip wire, there are three other significant downsides associated with the mobile trip-wire deterrent offered by the VJTF.

First, when a crisis erupts, NATO allies' decision making might not only be slow, but also the ultimate decision might be to avoid moving the mobile trip wire into place at all. A major poll conducted by the Pew Research Center in spring 2015 found a distinct wariness among many NATO publics about using military force to defend a NATO ally that comes into conflict with Russia. Most alarmingly, 58 percent of German respondents said that Germany should not use military force to defend a NATO ally in such a situation, while the equivalent figures were 53 percent in France and 51 percent in Italy.⁶¹ Given such sentiment, there is the risk that, even in the face of mounting evidence Russia was preparing to launch some type of military operations against a NATO member, there would be extreme wariness in certain parts of NATO about deploying the VJTF.

Second, and converse to the first downside, relying upon a mobile trip wire creates the potential for inadvertent escalation. Since the trip wire would have to be moved into place, there is the danger the alliance

could inadvertently create or escalate a crisis when none in fact existed. If NATO believes it is receiving warning signs of an impending crisis, then it might deploy the VJTF to a NATO state that appears to be under threat. But, if those warning signs are a false alarm, then the sudden movement of the VJTF could lead Russia to believe NATO has nefarious designs against it. Russia would, in such circumstances, presumably undertake defensive action in response. In that scenario, NATO would have inadvertently created a crisis that did not actually exist. The dangers of such an event occurring with a static trip wire are less acute, precisely because once it is in place it can serve its purpose without the need for further action. Admittedly, given the current wariness within Western societies about resort to military action, there is a greater danger that NATO would be unwilling to deploy the VJTF at all, than that it would move the force too hastily. Nevertheless, NATO's citizens and leaders should recognize the risks of inadvertent escalation associated with a mobile trip wire.

Third, as noted, a mobile trip wire can only be an effective means of deterrence by punishment if NATO is credibly able to threaten the associated punishment in the event the trip wire is crossed. NATO's leaders and citizens must, therefore, think about matters they had hoped were consigned to the dustbin of history. Namely, they must consider what punishments they would be willing and able to inflict upon an adversary who violated the sovereignty of a NATO member. Such punishments would not necessarily have to be nuclear. NATO leaders and citizens must begin to think about the full range of punishments—political, diplomatic, economic, and military—that could serve as credible means of deterrence.

The Downsides of Defense in Depth

Even in the event NATO expedites its decision making significantly, the VJTF and the broader NRF would still have to mobilize and deploy to their area of operations before they could serve either a deterrent or defensive purpose. Jakub Grygiel emphasizes that even the new unit may not be swift enough: "The problem is that 48 hours or three days—the time necessary to organize and send a rapid reaction force—is too long for the type of potential action that Russia might engage in. In 2 days the Baltics are gone, were Russia to engage in a limited war there."⁶²

Of course, whether the Baltics would truly be lost in two days depends upon the level of aggression Russia is willing to perpetrate. The Baltics could be gone within that timeframe in the event of a mass conventional attack by Russian forces. But, if the Kremlin chooses to attempt limited gains through hybrid warfare then it is not necessarily the case that all would be lost within 48 hours. Rather, some NATO territory close to the Russian border might be seized in that time. Assuming Russia's ability to make rapid gains, Grygiel and Wess Mitchell call for NATO to abandon its "defense in depth" strategy, whereby response forces are located away from NATO's flank.⁶³ Instead, they argue for "preclusive defense," which would entail strengthening the ability of NATO members along the eastern flank to defend themselves against Russian operations. For example, Grygiel and Mitchell argued that eastern members could be provided with antiarmor weapons and precision-guided rockets.⁶⁴ Doing so would raise the costs incurred by Russia in any operations against NATO members, thereby bolstering the alliance's ability to deter through denial. Grygiel offers another way to shift NATO's strategy away from defense in depth: "The Baltic states, Poland, Rumania [sic] are the frontline states now, and U.S. bases ought to be located there in order to enhance NATO's credibility and capability to deter any military attempt to revise the existing political order."⁶⁵

Grygiel and Mitchell persuasively enumerate the downsides of defense in depth. Even so, adopting a posture of preclusive defense would also have drawbacks. Most notably, doing so could lead Russia to believe NATO is embracing a highly aggressive stance. Even though that view would be unjustified, in this case objective reality is not all that counts. NATO must also consider Putin's *perception* of reality. Given the tense state of NATO–Russia relations at the moment, boldly moving to a preclusive defense posture risks fueling Russia's assertiveness and a Russian military response if Putin perceives the move as aggressive. In addition, Russia would argue that NATO's adoption of a full-blown strategy of preclusive defense violates the 1997 NATO–Russia Founding Act. It would likely use that claim as a pretext not only for an assertive military response but also for limiting diplomatic cooperation with the United States and other NATO countries on other issues.

Whether alliance leaders believe it wise to move further—and truly embrace a strategy of preclusive defense—should be based upon an assessment of Putin's likely reaction. Would adopting a preclusive defen-

sive posture in the near future do more to deter Putin or do more to fuel his assertiveness given his assessment of NATO's purpose in shifting its posture? To answer that question, alliance leaders will need to draw upon the best assessments available of Putin's thinking.

Insufficient Consideration of Appropriate Political Control Mechanisms for the VJTF after Deployment

In addition to the challenge posed by slow political decision making regarding the VJTF's deployment, a distinct challenge pertains to decision making in the period after the task force is deployed. So far there has been little public discussion about how political control over the VJTF's combat operations will be exercised. Strictly, the NAC will retain political control. But, the challenges of having a 28-nation body that relies upon consensus running a war are obvious. Indeed, during the Kosovo conflict, some in the media dubbed NATO's military campaign an example of "war by committee."⁶⁶

There are, of course, strengths and weaknesses to undertaking action as an alliance. As Patricia Weitsman pointed out, the very institutionalization of NATO that increases transparency and facilitates cooperation in peacetime may undermine fighting effectiveness during wartime.⁶⁷ On the other hand, those costs are offset by the enhanced political legitimacy conferred through multilateral action.⁶⁸ Furthermore, although NATO decision making ultimately requires consensus, the alliance has found ways to respect that requirement while also maximizing efficiency. During NATO's operations in Kosovo, to avoid a divisive internal debate while the alliance was at war, a compromise was struck whereby Secretary-General Javier Solana was delegated the authority to approve politically-sensitive target categories for NATO air strikes.⁶⁹ As a condition of the compromise, NATO members requested that Solana informally consult with those allies that had particular concerns before making his decisions.⁷⁰

In a future crisis, even after a decision has been made to deploy the VJTF, that force could be inserted into a fast-changing conflict environment. For the VJTF to be effective, it will likely require further political guidance as it seeks to react to the actions of an adversary. To ensure operational effectiveness, NATO members could decide to delegate such decisions to a subset of officials or member states. But, in public announcements so far, there has been no indication that official planning

has taken place yet regarding whether such delegation is necessary and, if so, who exactly should be authorized to make decisions after the VJTF has been deployed.

Will NATO Have the Will and Military Capacity to Respond to Two Crises Simultaneously?

The third rationale for the RAP is its potential contribution in giving NATO a capacity to respond to two crises simultaneously. The VJTF would have to be used to deal with one, and American ground forces in Europe would be used to deal with the other. For that to happen, three things must hold: (1) there must be consensus among alliance members that the alliance should respond to multiple crises; (2) since the United States would need to play a pivotal role in responding to both crises, it would have to be willing to do so; and (3) the military capacity for simultaneous deployment must exist. Summoning public support for deploying the alliance's forces for a single contingency—let alone winning support for two deployments at once—is likely to remain a difficult task. Exacerbating the challenge is the reality that, as Martin Michelot points out, different members of NATO have different threat perceptions, with eastern members most concerned about Russia and some other members most worried by instability to NATO's south.⁷¹ Consequently, if we witnessed the outbreak of simultaneous crises, alliance members could find themselves debating which is the more pressing priority rather than responding to both.

Additionally, the rosy picture painted above assumes the United States would be willing and able to provide a host of enabling capabilities for the VJTF, as it has announced it will do, while also using its own forces to respond to another contingency. It is an open question as to whether the United States has the capabilities to do that at present, given the various demands on its military resources and the impact of defense spending constraints on the overall level of resources available to the American military.⁷²

Is NATO's Defense Spending Sufficient to Achieve the RAP's Strategic Benefits?

Reaping the strategic benefits promised will be expensive for NATO members. To take just one example, they will need to maintain personnel in a state of readiness sufficient to make the VJTF's deployment

objectives a reality. They will have to devote resources to training and exercising those forces and create and maintain the infrastructure to deploy the forces rapidly.⁷³ In theory, the public announcement of the VJTF's intended capabilities could act as a spur to investment since NATO members now have some concrete deliverables. But, thus far the trajectory of overall alliance defense spending remains worrisome. Notwithstanding the several bits of welcome news described above, NATO's overall spending on defense was estimated to have declined by 1.5 percent in real terms in 2015 compared to 2014.⁷⁴

Problems in Improving Strategic Warning

As Richard Betts pointed out in the 1980s, when assessing one's vulnerability to surprise, it is useful to make a distinction between strategic warning and policy response.⁷⁵ That is, governments and alliances can be caught by surprise either because they failed to receive warning of a dramatic change in the security environment or because, even though they received warning, they failed to respond adequately to it.

The most significant reforms NATO has undertaken since the Wales summit are intended to improve the alliance's ability to deter future crises and to respond to them should they occur. After all, the VJTF is a worthy attempt to enhance policy response. There is less evidence that the alliance has made major reforms to improve its receipt of strategic warning regarding security challenges. The VJTF's ability to move within 48 hours will count for little if NATO leaders do not receive adequate warning of mounting crises.

The Wales summit declaration stated that "we will enhance our intelligence and strategic awareness and we will place renewed emphasis on advance planning."⁷⁶ But, there is reason for concern about the alliance's current capabilities related to strategic intelligence and the provision of warning about impending crises. In April 2015, the SACEUR told the Senate Armed Services Committee, "Russian military operations in Ukraine and the region more broadly have underscored that there are critical gaps in our collection and analysis. Some Russian military exercises have caught us by surprise, and our textured feel for Russia's involvement on the ground in Ukraine has been quite limited."⁷⁷

During the hearing, General Breedlove said that his command's pool of Russia experts had "shrunk considerably" since the end of the Cold

War, as analysts and assets were shifted to other priorities, notably including the wars in Iraq and Afghanistan.⁷⁸

Possible Links between NATO's Changing Conventional Posture and Russia's Nuclear Threats

Since the outbreak of the Ukraine crisis, Russia's overall military tempo has increased appreciably. For example, Russian heavy bomber aircraft have recently flown more patrols outside of Russian airspace than in any year since the Cold War.⁷⁹ Among all the manifestations of Russia's increased military activity, perhaps the most concerning is the manner in which Russia has made nuclear threats. In March 2015, during a television documentary, President Putin said he had been ready to put his nuclear forces on alert during the country's forcible seizure of Crimea.⁸⁰ Later the same month, the Russian ambassador to Denmark threatened that his country would target its nuclear missiles at Danish warships if Denmark went through with its plans to contribute radar capabilities to NATO's missile defense shield.⁸¹ In November 2015, a Russian television broadcast of a meeting between Putin and senior military officers revealed a proposal for the development of a Russian torpedo designed to deliver a nuclear weapon against foreign ports.⁸² Although the Russian government later claimed that public revelation of the project was an accident, it is more likely that the Kremlin wanted the world to believe that it is committed to developing such a weapon.⁸³

What is driving the increased frequency with which Putin and other Russian officials are making both veiled and explicit nuclear threats? Putin could be deliberately cultivating a reputation for being willing to escalate quickly to the nuclear level and use that reputation as a means of coercion. As Schelling said, "Sometimes we can get a little credit for not having everything quite under control, for being a little impulsive or unreliable."⁸⁴ Putin may believe that if he can convince NATO leaders that he is willing to escalate rapidly to the nuclear level, then in any future crisis—say over the Baltic countries—he will hold an advantage.

There is an alternative—but not mutually exclusive—reason for why Russia might have decided to stress its nuclear capabilities over the past months. As Pifer explains, "Although Russia is modernizing its conventional forces, NATO maintains qualitative and quantitative edges, while China has greatly increased its conventional capabilities. Nuclear weapons offer an offset for conventional force disadvantages."⁸⁵

Although Russia might hold advantages in the sheer number of troops it has deployed close to NATO's eastern flank, the alliance is regarded as having a qualitative edge. Today, NATO leaders should be alert to the possibility that their moves to bolster the alliance's conventional power in Eastern Europe will drive Putin to rely increasingly upon nuclear weapons as part of Russia's military strategy. Even though NATO leaders do not intend their increasing conventional power to be a means to take offensive action against Russia, what matters, once again, is Putin's *perception* of why NATO is bolstering its conventional forces in the alliance's east. If Putin believes the moves are an offensive threat to Russia, he may respond by placing greater emphasis on nuclear weapons in Russia's military strategy. Nuclear weapons could, in his mind, be Russia's trump card. That does not mean NATO should desist from the moves already afoot to augment its conventional power. Nevertheless, NATO officials should remain keenly aware of the possibility that doing so could have unwelcome consequences.

Policy Recommendations

Before the NATO summit in July 2016, the alliance's leaders should work to address the above challenges so as to fulfill the strategic rationales of the RAP. As a starting point, NATO ministers should consider nine policy recommendations.

Bolster NATO's Persistent Deployments in the East

Given the downsides of defense in depth, a moderate increase in the military presence along the alliance's eastern flank—which would enhance the trigger for punishment—should be considered immediately. The alliance should consider bolstering the persistent deployments already underway in the east in two ways: increasing their overall size and ensuring that additional NATO members join the United States and United Kingdom in contributing ground forces. Pifer has recommended that paired US and European units form joint trip wires in each of the following countries: Poland, Estonia, Latvia, and Lithuania.⁸⁶ Establishing such units would not require the United States to deploy any more forces since it has already committed 150 personnel to each of those nations on a persistent basis. The United Kingdom has committed to provide 100 personnel in total. Therefore, creating four paired US—

European units—each comprising 300 personnel—would only require that NATO's remaining 25 European nations agree to contribute 500 troops from among them for persistent deployments. After that step is taken, NATO could increase the size of each of the units, if needed, as a response to future increases in Russian assertiveness.

Undertaking this step will bolster the alliance's static trip wire, while avoiding an announcement that the alliance is stationing a large number of troops in the east permanently. That is, it will strengthen the trigger for deterrence by punishment without moving to a full-blown strategy of preclusive defense—and deterrence by denial—that risks contributing to Russia's military assertiveness and potentially increasing its reliance on nuclear weapons as a military strategy.

Provide Eastern Members of NATO with Enhanced Defensive Capabilities

NATO should not move to a full-blown strategy of preclusive defense at the moment. Nevertheless, Grygiel and Mitchell make a strong case that by relying almost exclusively upon defense in depth, NATO risks succumbing to limited war operations by Russia in eastern member states. Therefore, the alliance should consider adopting Grygiel's and Mitchell's recommendation for bolstering the military capabilities of eastern allies by providing them with defensive capabilities. For example, the alliance could consider the construction of hardened aircraft shelters at air bases in the Baltic States, so alliance air assets deployed to the region would be less vulnerable to the threat of cruise missiles or short-range ballistic missiles. Additionally, frontline states—especially Estonia, Latvia, Lithuania, and Poland—should receive enhanced defensive capabilities, such as light antiarmor weapons, to raise the potential costs Russia would incur in any limited war operations against them.

By raising those costs, this step would offer NATO a capacity for deterrence by denial against Russia. In addition, by providing defensive weapons, NATO can allay some of Putin's concerns regarding the motivation behind the policy, thereby reducing the potential for the move to fuel an aggressive reaction on Russia's part. Of course, as Robert Jervis once pointed out, "whether a weapon is offensive or defensive often depends on the particular situation."⁸⁷ After all, one can use an antiarmor weapon defensively if one's territory is being invaded, but the same weapon could also be used during offensive operations.

Therefore, if NATO leaders decide to supply eastern allies with additional weapons for defensive purposes, they should signal that that is indeed the purpose. For example, by providing such weapon systems to the Baltic members without moving large numbers of NATO troops into those countries on a permanent basis, the alliance can signal that the weapons are to be used for defensive purposes, rather than for supporting offensive operations by NATO against Russia. By considering this recommendation, the alliance could attain some of the benefits associated with preclusive defense, without all of the risks a full-blown version of the strategy would entail.

Even so, NATO should not rule out preclusive defense as a potential approach at some point in the future if Russia continues to flex its military muscles. But, before doing so, NATO leaders and officials would have to weigh carefully the risks and benefits of taking that step.

Delegate Power over VJTF Deployment

To ensure the VJTF can be a truly rapid reaction force, alliance members should consider how they can facilitate swifter political decisions regarding force deployment, while still allowing all 28 democracies a voice in determining when NATO resorts to using the unit. As Leo Michel points out, consensus decision making in NATO embodies a very important principle: "It reflects the NATO structure as an alliance of independent and sovereign countries, as opposed to a supranational body, and exemplifies for many the 'one for all, all for one' ethos of the organization's collective defense commitment."⁸⁸

For reasons of democratic accountability, NATO should not dispense with the principle that the alliance acts through consensus. But, at the same time, alliance leaders must consider the costs incurred in terms of reaction time. Some security experts have already recommended the alliance undertake discussions regarding how much power over the VJTF should be devolved to the SACEUR.⁸⁹ NATO could establish a procedure whereby, in times of rising tensions, the NAC—acting through consensus—could delegate to the alliance's secretary-general and the SACEUR the ability to deploy the VJTF. This would represent a variation of the precedent set during the Kosovo campaign when the secretary-general was delegated the authority to expand the target set for NATO air strikes. Under this mechanism, the NAC could reach a unanimous agreement that for a period of, for instance, 90 days, the

secretary-general and the SACEUR could jointly agree to deploy the VJTF to an area of crisis. After 90 days, the delegated authority could be renewed or might be allowed to lapse if there no longer appeared to be a sufficient threat to justify continuation.

Before the Warsaw Summit, NATO leaders should consider whether this procedure, or a similar one, offers substantial advantages in terms of swifter political decision making, while continuing to respect NATO's tradition of consensus sufficiently. Furthermore, NATO leaders must carefully consider whether such a proposal contains adequate checks against the dangers of inadvertent escalation that might result from inopportune deployment of the VJTF in a time of apparent crisis.

Delegate Political Control over the VJTF after Deployment

In a similar vein, NATO leaders should also consider potential mechanisms for delegating political control over the VJTF's subsequent operations after it has been deployed. Under current alliance arrangements, the NAC would make a policy decision to respond to a crisis and would issue strategic planning guidance to the SACEUR.⁹⁰ Since such guidance might need to be refined to take account of an evolving crisis situation following VJTF deployment, an important question is whether it would be beneficial for the NAC to delegate control over subsequent updates to planning guidance to a subset of NATO officials and members? If so, what is the appropriate group? For example, if NATO follows the recommendation above and decides to delegate VJTF deployment decisions to the secretary-general and SACEUR, should those two officials also have the authority to direct subsequent changes in the VJTF's operations, or should a wider group have control over postdeployment actions?

Undertake Political Decision-Making Exercises as a Complement to Military Exercises

As an additional means of increasing the speed of political decision making, as well as allowing officials to think through the potentially escalatory implications of deploying the VJTF, NATO should familiarize civilian officials from member states with the types of decisions they might be called upon to make during a crisis. Commendably, NATO has increased the size and frequency of its military exercises since the

Wales summit. It should now complement those exercises with similar initiatives related to political decision making.

Holding such crisis simulation exercises among senior civilian officials would help them to identify, ahead of time, when the alliance would be prepared to deploy the VJTF and how it might be used. By doing so, civilian officials will be more prepared, when the crunch actually comes, to take the necessary political decisions to use the spearhead force, rather than having to think through the modalities of doing so from scratch. Furthermore, for at least some future NATO military exercises, the alliance could integrate civilian crisis simulations into the military activities, thereby helping the organization to prepare itself to integrate rapid political decision making with rapid military deployment.

Such exercises should be used as an opportunity to think through how decisions to deploy the VJTF might contribute to crisis escalation. For example, as part of the simulations, NATO experts on Russia could give their assessment of likely Russian responses to decisions taken by NATO civilian leaders during the exercise. By considering such responses, alliance leaders will be able to develop a better understanding of how Putin might react to their use of the VJTF.

Develop the Ability to Respond to Two Crises Simultaneously

The major obstacles to using the RAP structures as a means of responding to two crises simultaneously are political will and military capacity. A way to overcome those obstacles would be, first, to conduct an assessment of whether the United States already has the military capacity to provide combat enablers for a VJTF deployment while, at the same time, deploying a VJTF-sized force composed of American personnel in Germany and Italy to deal with a second crisis. If so, NATO should, with appropriate notifications to Russia and other countries, conduct military exercises to showcase its capacity to respond to two crises simultaneously.

If the alliance currently lacks the military capacity to do so, then it should prioritize developing the ability to deploy two 5,000-personnel units rapidly and concurrently. Doing so would likely necessitate developing additional combat enablers for the VJTF, and European nations would have to develop such capacities themselves so US assets could be used to support its own operations in such a scenario. Once NATO has

developed such capability, then it should, as above, showcase it through suitable exercises.

While far from a panacea for the lack of political will to undertake multiple military operations, such exercises could help to mitigate that reluctance within Western societies. After all, if NATO has a demonstrated capability to respond to two crises, political leaders within the alliance would likely feel somewhat more comfortable about doing so should the need ever arise. Additionally, by showcasing its ability to handle two operations concurrently, the alliance can seek to deter an adversary from trying to use Western states' preoccupation with a security crisis, or distraction, in one region as an opportune moment to spark another crisis.

Appoint an Independent Commission to Hold NATO States Accountable for the Operational Deliverables Contained in the RAP

Developing and then maintaining the operational capabilities contained within the RAP will only occur if the alliance finds a way to incentivize member states to devote the necessary resources to the task. Publicly stating NATO's objectives will not be enough, since there is already a tradition of US secretaries of defense chiding European members of NATO for not spending enough on defense.⁹¹ In spite of such exhortations, the problem of inadequate spending persists.

Until now, the SACEUR has been responsible for declaring whether the alliance has met the operational targets of the RAP, as he did when he certified that the VJTF was operational last year. But, another useful means of incentivizing members to meet their RAP commitments would be the appointment of an independent commission to evaluate whether NATO is delivering on its objectives. By establishing a second entity tasked with assessing whether its readiness goals are being met, NATO would increase the incentives members have to meet their stated commitments since they would not wish to risk a negative report from the independent body.

The commission would be comprised of former senior military officials from across the alliance. On a periodic basis, NATO would test the VJTF and NRF capacities in exercises similar to last year's Noble Jump. The independent commission would produce a public report evaluating the alliance's performance and reaching an assessment of whether NATO is meeting the RAP's deliverables. The report would address the

performance of specific allies, evaluating whether their forces have been maintained at sufficient levels of readiness and have achieved the deployability necessary to meet RAP objectives. The report would act as a form of public pressure to ensure the alliance commits the necessary resources to making the RAP a reality.

Of course, a public report comes with an obvious downside, namely that it would alert potential adversaries to weaknesses in the alliance's operational performance. Yet, that is also a virtue. Since member states would want to prevent a situation in which they failed to meet their RAP commitments and that fact was then advertised to the world, they would have an incentive to ensure they are in fact delivering on those goals. It would serve as a strong commitment device to the welcome objectives set out in Wales.

Review the Role of the NATO Intelligence Fusion Center

As noted, thus far NATO's reforms have focused on enhancing policy response, whereas there appears to have been less attention given to increasing the alliance's ability to provide policy makers with strategic warning. NATO already has a multinational intelligence unit—the NATO Intelligence Fusion Center (NIFC)—located in the United Kingdom. The NIFC falls under the operational command of the SACEUR, and its mission is to provide intelligence to warn of potential crises and to support the planning and execution of NATO operations.⁹² As part of an effort to enhance the alliance's strategic warning capacities, NATO should review the NIFC's operations and look for ways to bolster its capacities. The review should evaluate the performance of the NIFC since its establishment in 2007, including an assessment of how effectively it has contributed to intra-alliance intelligence sharing.

Different members of the alliance are likely to have comparative advantages in the collection and analysis of intelligence on particular threats and potential crises. For instance, when it comes to assessing Russian activities, eastern members of the alliance likely possess particular assets—notably including a cadre of intelligence officers with Russian language skills—that can contribute significantly to alliance-wide efforts. A thorough review of NIFC's activities would help ensure that best use is being made of all members' intelligence capabilities for purposes of strategic warning. In addition, the review would consider ways to improve such warning. For example, it could consider what warning

indicators might precede the onset of Russian hybrid war operations in NATO members in the east or whether there are particular indicators that would give the alliance better warning of political instability in Middle Eastern countries.

Seek a Better Understanding of Russia's Nuclear Doctrine and Thinking

As NATO continues to augment its capacity for conventional military action to defend the eastern flank of the alliance, its leaders should seek to develop a better understanding of Russia's nuclear doctrine and how NATO's conventional reforms might affect it. NATO should not refrain from improving its conventional capabilities since those improvements will enhance the alliance's deterrent, defense, and crisis response abilities. Still, as NATO does so, it should also seek a deeper understanding about how Russia might adapt its nuclear strategy in response. NATO can thereby better prepare itself to counter Russian nuclear doctrine in future crises.

Developing a better grasp of Russian thinking regarding nuclear weapons is an incredibly difficult task. Notwithstanding that, Hans Kristensen of the Federation of American Scientists has proposed engagement in serious dialogues with Russian nuclear experts.⁹³ Through such discussions, conducted at both the official and the track-two levels, NATO officials could strive to obtain a clearer understanding of Russia's nuclear thinking. While the potential to change such thinking might be limited, deeper understanding of how Russia's current leaders conceptualize the utility of nuclear weapons could be incredibly beneficial in helping NATO leaders to avoid sudden and unwanted escalation of future crises with Russia. If NATO simply proceeds to enhance its own conventional capacities without understanding how that process might be influencing Russian thinking—whether that thinking is justified or not—the alliance will be travelling down a dangerous path with its eyes closed.

Conclusion

The reemergence of Russian military assertiveness, coincident with the rise of the ISIL, was a rude awakening for NATO members. In unveiling the RAP, alliance leaders demonstrated that they could put for-

ward a coherent response. The RAP, if implemented fully, offers four major strategic benefits. Nevertheless, considerable challenges remain. Between now and the Warsaw summit, NATO leaders should tackle those challenges by considering the policy recommendations set out above. If they do so, NATO will find itself better prepared to respond to the next major crisis, whether it emanates from close to its borders or from an out of area location. ■■■

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Deterrence Adrift?

Mapping Conflict and Escalation in South Asia

Ryan French

Abstract

Tensions between India and Pakistan spiked from 2014 through late 2015, meriting an analysis of how an armed conflict might unfold between the two nuclear-armed neighbors. A common assumption in academic and policy circles is that any modern-day Indo-Pakistani conflict would remain limited and localized, as nuclear deterrence would dissuade either side from seeking a Carthaginian peace. Accordingly, India's limited war doctrine, Cold Start, has attracted a great deal of interest and scrutiny among South Asia analysts. Cold Start envisions a shallow but high-intensity ground offensive into Pakistan with a handful of division- or brigade-sized strike formations, calibrated in such a way that avoids crossing Islamabad's nuclear redlines. The doctrine is premised on the assumption that India will be able to assert escalation control and prevent the ensuing conflict from spiraling out of hand. However, the reality is the very opposite. If a limited ground incursion is authorized, military necessity and miscalculation could very well precipitate all-out conventional war, bringing South Asia to the brink of nuclear calamity. This article distinguishes itself from the prevailing Indo-Pakistani escalation literature by mapping the military operational imperatives that New Delhi and Islamabad might face in a Cold Start contingency and by exploring the escalatory implications of the defensive strategy outlined in Pakistan's latest army doctrine, Comprehensive Response, published in December 2011.

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Narendra Modi's election as India's 15th prime minister in spring 2014 seemed like a welcome opportunity for India and Pakistan to "re-set" their perennially strained relationship. In a surprise move, Modi extended an invitation to Pakistani Prime Minister Nawaz Sharif to attend his inaugural ceremony in New Delhi. Sharif obliged, the two shook hands, and it appeared the two enduring rivals might be able to set aside their differences and begin working toward a common interest. Pessimistic analysts, meanwhile, cautioned that the underlying causes of the Indo-Pakistani rivalry remained unaddressed and relations were unlikely to improve—especially given the traditionally hawkish stance of Modi's victorious Bharatiya Janata Party (BJP), which secured a majority in the Indian Parliament.

During Modi's first year in office, the pessimistic forecast became true, as Indo-Pakistani tensions increased sharply. In July 2014, reports emerged of numerous ceasefire violations across the Line of Control (LOC) in Kashmir, with India accusing Pakistan of using artillery fire to cover the infiltration of jihadist militants behind Indian lines.¹ In August, India canceled a much-anticipated meeting of the two countries' foreign secretaries after a Pakistani envoy held a dialogue with Kashmiri separatists.² In early January 2015, the Indian Ministry of Defense alleged it had intercepted a Pakistani fishing boat laden with explosives off the coast of the Indian city of Porbandar, Gujarat, prompting speculation that a Mumbai-style terrorist attack had been narrowly averted.³ Later that month, in another sign of the deteriorating bilateral relationship, India ordered Pakistan International Airlines to shutter its offices in New Delhi.⁴ As 2015 progressed, the acrimony showed little sign of abatement. Sporadic skirmishes along the LOC resumed after their winter hiatus, and in May, during a political rally in Kashmir, Indian Home Minister Rajnath Singh warned, "If Pakistan wants its own welfare, then it must stop meddling in the affairs of other countries. . . . Those who want to harm the pride, integrity and sovereignty of [India] will be given a befitting reply. We trust our army, our paramilitary and our forces."⁵ Although relations thawed unexpectedly in December 2015 following a flurry of high-level diplomacy, only time will tell whether these discussions will cultivate détente or stagnate like previous peace efforts.

In any event, the spike in Indo-Pakistani tensions in 2014–15 merits a careful analysis of how an armed conflict might unfold between the two nuclear-armed neighbors. A common assumption in academic and policy

circles is that any contemporary Indo–Pakistani war is likely to remain limited and localized, as nuclear deterrence would dissuade either side from seeking a Carthaginian peace.⁶ Accordingly, much scholarly attention has been paid to India’s limited war doctrine, Cold Start. Unveiled in 2004 by the Indian Army chief, Cold Start envisions a high-intensity, short-duration ground incursion into Pakistan with a few strike units, calibrated in such a way that avoids crossing Islamabad’s nuclear red-lines.⁷ The purported military objective is to seize a portion of Pakistani territory along the international border as a postwar bargaining chip. Many high-profile Indian commentators are sanguine that New Delhi would be able to assert “escalation control” and prevent a cross-border offensive from spiraling out of hand.⁸

This article contends the very opposite. What might begin as a limited ground invasion into Pakistan may well escalate into all-out conventional war with the potential for a nuclear exchange. While other analysts have written on the escalation risks of limited war in South Asia, this article distinguishes itself from the extant literature by mapping the military operational imperatives New Delhi and Islamabad might face in a Cold Start contingency and by analyzing the implications of Pakistan’s 2011 army doctrine, Comprehensive Response. The argument begins with background on India’s Cold Start doctrine and the arms procurement and doctrinal review measures Pakistan has taken in response, such as the development of tactical nuclear weapons. Next it argues why a limited-aims offensive in the style of Cold Start is likely to spiral into a full-scale conflict, citing the potential for misread intentions, geographic vulnerabilities, Pakistani defensive mobilizations, and Indian offensive operations to fuel an action-reaction cycle. Ultimately, this article concludes that a limited ground offensive into Pakistan risks opening a Pandora’s box of military necessity and miscalculation that could result in nuclear calamity.

India’s Cold Start Doctrine and Pakistan’s Response

On the morning of 13 December 2001, five terrorists belonging to Pakistan-based militant groups Lashkar-e-Taiba and Jaish-e-Mohammed infiltrated the grounds of the Indian Parliament building in New Delhi. Armed with assault weapons and grenades, the attackers killed 11 and injured 18 before being subdued by police. The Indian government,

convinced the Pakistani security establishment was complicit in the attack, responded by launching Operation Parakram. India's three strike corps—headquartered in Ambala, Haryana; Bhopal, Madhya Pradesh; and Mathura, Uttar Pradesh—received orders to mobilize and deploy along the international border with Pakistan. It appeared that a fourth Indo-Pakistani war was in the offing.

Yet Operation Parakram immediately ran into a major snag. The long distance between the international border and India's strike corps cantonments (located in the interior of the country), combined with the large amount of military equipment that needed to be transported by rail, significantly delayed the mobilization process.⁹ All told, it took the strike corps three weeks to reach their designated concentration areas. By this time, Pakistan had already countermobilized and fortified itself in preparation for an Indian attack, creating a cross-border standoff of roughly one million troops.¹⁰ Moreover, the international community—particularly the United States and United Kingdom—intervened to curtail the crisis, urging restraint on India's part and compelling Pakistan to crack down on terrorism. Sensing the "window of opportunity" for punishing Pakistan had come and gone, India's political leadership lost its nerve to retaliate.

The botched mobilization process of Operation Parakram prompted India to explore new ways of inflicting military punishment on Pakistan without relying on the lumbering strike corps, which lacked the critical element of strategic surprise. New Delhi sought a swift and decisive operational concept—one that would allow it to achieve military objectives before the international community could intervene and force a ceasefire but do so in a way that skirted Pakistan's ambiguous nuclear redlines. New Delhi's thinking during this time was also influenced by its victory in the 1999 Kargil War, which saw Indian forces expel Pakistani troops and irregulars that had infiltrated Indian-administered Kashmir. The outcome of the Kargil episode suggested that India could fight and win a conventional war against a nuclear-armed Pakistan without causing undue escalation, so long as the military objectives remained limited and geographically localized.¹¹

This period of introspection culminated in a new limited war doctrine, revealed by the Indian chief of army staff in April 2004. Cold Start, as the doctrine has come to be known, envisions multiple shallow incursions by Indian Army units across the international border

within 72 to 96 hours of receipt of mobilization orders. These forces would temporarily occupy a narrow strip of Pakistani territory (50–80 kilometers [km] deep), which would be leveraged in postconflict talks to force concessions on cross-border terrorism.¹² By keeping the military objectives limited and exploiting its conventional military edge over Pakistan, India believes it would be able to control the pace of escalation and avert nuclear brinkmanship. Cold Start, in other words, aims to circumvent Pakistan's nuclear deterrent and is an arguable manifestation of the deterrence stability-instability paradox.¹³ Of note, the Indian security establishment has sought to distance itself from the Cold Start "brand" over the years and instead refers to the doctrine as the "proactive strategy." As Indian Army Chief Gen V. K. Singh remarked (vaguely) in 2012, "There is nothing like Cold Start. But we have a 'proactive strategy' which takes steps in a proactive manner so that we can achieve what our doctrines and strategies [demand]."¹⁴ In any case, whether one refers to it as *Cold Start* or the *proactive strategy*, India has developed the capability to prosecute a limited blitzkrieg into Pakistan. The general consensus among South Asia specialists is that the likely catalyst for a Cold Start offensive is a major terrorist attack similar to the parliament incident or Mumbai attack of 2008—that is, an attack perpetrated by a Pakistan-based militant group with the alleged complicity of elements of the Pakistani government. With the BJP in power in New Delhi and Hindu nationalism on the rise, the potential for an act of terrorism to spark an Indo–Pakistani armed confrontation cannot be dismissed.

Operationally, the Cold Start doctrine originally called for India to reconstitute its three armor-heavy strike corps (40,000–80,000 troops each) into eight smaller formations known as integrated battle groups (IBG).¹⁵ The IBGs would be garrisoned in cantonments close to the international border, such that they could mobilize and respond within the aforementioned 72 to 96 hour window. Each IBG would be the strength of approximately one army division (10,000–30,000 troops) and would be comprised of tanks, mechanized infantry, and artillery. Another force structure change envisioned by Cold Start was for India's holding corps—an assemblage of formations garrisoned close to the international border that specialize in defensive operations—to be augmented with a limited offensive punch via the provision of tanks and artillery. According to Walter Ladwig, these newly dubbed "pivot corps"

would be able to “concurrently man defensive positions and undertake limited offensive operations as necessary.”¹⁶

Over a decade has passed since Cold Start’s unveiling, and its current operationalization is mixed. To date, India has made no apparent effort to reconstitute its three strike corps into eight IBGs. Yet the Indian Army claims to have reduced the strike corps’ mobilization time from three weeks to 48 hours by way of “better road management, better offloading, better rail links, equipment and man management.”¹⁷ Some experts have suggested the actual mobilization time is probably closer to five to seven days.¹⁸ In addition, India has reinforced each of its four defensive holding corps along the international border with an armored brigade, granting the holding corps the flexibility to “pivot” between offense and defense. India may intend to use these newly raised armored brigades in lieu of IBGs if the decision is made to initiate limited cross-border operations. Yet any invasion of Pakistan using a handful of brigade-sized formations (3,000–5,000 troops each) would simply lack the offensive clout that eight division-sized IBGs could bring to bear. Thus, if India opts to execute a Cold Start-style offensive using these armored brigades, the three strike corps would likely be mobilized toward the international border to provide “offensive surge capability.”¹⁹

Of course, the activation of India’s strike corps is unlikely to telegraph “limited” war aims to a nervous adversary such as Pakistan, since these cumbersome formations are equally capable of deep strike and maneuver. Such a miscommunication of intent would appear to defeat the purpose of Cold Start because it risks triggering an outsized Pakistani reaction and an escalation spiral that neither side could control. India’s answer to this seeming dilemma is the theory of “escalation dominance”—the belief that India’s latent military superiority vis-à-vis Pakistan should deter escalation on Islamabad’s part at every rung of the escalation ladder, because the Indian military can match and one-up any counteroffensive Pakistan attempts. Furthermore, India believes that its nuclear doctrinal policy of “massive retaliation” nullifies any consideration of limited, defensive nuclear options by Pakistan, because the devastation from India’s retaliatory strike would be unacceptable to Pakistan’s leadership. Put succinctly, escalation dominance refers to the ability to “deter by demonstrating an ability to prevail.”²⁰

Pakistani Reactions

Cold Start has generated a great deal of anxiety in Islamabad. Pakistanis in Track II forums over the past decade have frequently opined that the limited war doctrine has “disturbed” deterrence stability in South Asia. Accordingly, Pakistan’s security managers have responded with visible countervailing actions intended to repair the perceived fault lines in the bilateral deterrence relationship and chip away at India’s escalation dominance theory. The hedging action that has created the most controversy thus far is Pakistan’s decision to field tactical nuclear weapons (TNW). On 19 April 2011, Pakistan’s Inter-Services Public Relations directorate (ISPR) announced a successful flight test of the Hatf-IX/Nasr—a 60-km-range, solid-fueled ballistic missile designed for launch from a road-mobile platform. According to the ISPR press release, Nasr “carries nuclear warheads of appropriate yield with high accuracy. . . . This quick response system addresses the need to deter evolving threats.”²¹

The deterrence logic behind Pakistan’s introduction of TNWs is the belief that these weapons, by virtue of their lower explosive yields, are a more proportionate, and therefore credible, deterrent against a limited Indian invasion than strategic, high-yield nuclear weapons. For Pakistan, the deterrence value of TNWs is enabled by Pakistan’s “first use” nuclear policy and intentionally ambiguous nuclear redlines. By implication, India’s war planners cannot be certain that a small-scale invasion would not be met with a hail of Nasr missiles. This uncertainty, in Pakistan’s calculus, should deter Indian aggression—even of a limited sort. Indeed, Pakistan’s nuclear theologians are confident that Nasr is a boon for deterrence stability, hailing the missile as a “weapon of peace” that has “neutralized” the Cold Start doctrine and established “full-spectrum deterrence.”²² They dismiss India’s threat to retaliate massively against a tactical nuclear bombardment as exceedingly disproportionate, oblivious to Pakistan’s second-strike capability, and incredible. Insofar as Islamabad truly believes it can employ Nasr without prompting massive retaliation, the system can be interpreted as a Pakistani gambit for escalation dominance.²³ Since Nasr’s inaugural flight test, Pakistan has conducted at least four additional flight tests, which suggests a firm commitment to the TNW route. A reversal appears unlikely.

Another major step Pakistan has taken to countervail Cold Start is the development of a new army doctrine. Shortly after his 2008

appointment as Pakistan's chief of army staff, Gen Ashfaq Parvez Kayani initiated a doctrinal review and refinement process.²⁴ In support of this objective, Pakistan held a series of field exercises from 2009 to 2010 to validate the core operating principles of the forthcoming army doctrine.²⁵ The third iteration of these exercises involved approximately 20,000–50,000 Pakistani troops in the eastern part of the country, in the provinces of Punjab and Sindh.²⁶

Pakistan's doctrinal review process culminated with the December 2011 publication of *Pakistan Army Doctrine 2011: Comprehensive Response*, which emphasizes rapid mobilization in response to a cross-border incursion by Indian forces. The doctrine also endorses a counteroffensive into enemy territory, wherever the opportunity presents itself—a principle that clashes with India's escalation dominance theory, which holds that India's military edge over Pakistan should dissuade Islamabad from deliberately amplifying the scope of violence. While a Pakistani cross-border counteroffensive would be highly escalatory, the doctrine was seemingly designed with escalation in mind to make New Delhi question its ability to keep a limited war limited and devoid of nuclear risk. Pakistan hopes this uncertainty will paralyze India's political leadership from authorizing Cold Start in the first place, or at the very least, force India to drastically curb its military objectives in a Cold Start campaign.

In summary, the advent of the Cold Start doctrine has prompted India to modify its conventional force structure to accommodate limited cross-border land operations. Pakistan, for its part, has responded by fielding TNWs and revising its war-fighting doctrine in the hopes of dispelling India's escalation dominance concept and reinforcing deterrence stability. It is possible that these countervailing steps may deter India from launching a Cold Start offensive. Then again, if New Delhi interprets these steps as bluster and authorizes a cross-border incursion, the ensuing conflict is unlikely to remain localized and limited.

Escalation Risks of Cold Start

Limiting escalation in a kinetic conflict between two nuclear-armed rivals with capable militaries and a history of mutual enmity is a delicate proposition. Five escalation factors are likely to transform a limited Indian ground invasion of Pakistan—in the style of Cold Start—into a full-scale conflict. These factors include: Pakistani threat perceptions,

Pakistan's geographic vulnerabilities, Pakistani army doctrine, Indian escalatory actions, and Pakistani tactical nuclear weapons risks. Each of these escalation factors must be examined in more detail to understand the potential for a nuclear crisis.

Pakistan's Perception of Indian Threat

The relationship between India and Pakistan—frequently described as one of enduring rivalry and mistrust—is beset by numerous grievances. The most well-known quarrel is the territorial dispute over Jammu & Kashmir, which remains unresolved and is punctuated frequently by artillery shelling and small arms fire across the LOC. The former princely state has been in constant turmoil since the late 1980s, when an insurgency backed by Pakistan's Inter-Services Intelligence erupted against the Indian-administered side.²⁷ Other sources of tension include the copious wars and militarized crises that have consumed the two countries since the 1947 partition—three Indo-Pakistani wars (1947–48, 1965, and 1971), the 1984 skirmish over the Siachen Glacier in Kashmir, the 1986–87 Brasstacks crisis, and the 1999 Kargil War, to name a handful. Another stumbling block in the bilateral relationship is the issue of cross-border terrorism. The 2001 attack by Pakistani terrorists on the Indian Parliament building precipitated a months'-long standoff between both countries, and another crisis unfolded in the wake of the 2008 attacks in Mumbai. India has accused the Pakistani government of complicity in these attacks, and Pakistan has professed innocence. The prolonged state of rivalry in South Asia has imbued Pakistan's security establishment with a mentality that assumes, by default, the worst of Indian intentions. This mentality colors India as an existential threat searching for an opportunity to deal a knockout blow to the Pakistani state. This pessimistic threat calculus suggests that, in the event India initiates a limited ground invasion akin to Cold Start, Pakistan is likely to mobilize disproportionately, fearing the invasion to be a prelude to something larger.

According to research by C. Christine Fair, Pakistan's distrust of New Delhi is a prominent and persistent theme in Pakistani defense literature, spanning multiple decades. Much of this literature characterizes India as an aspiring hegemon looking to subdue its western neighbor. As Pakistan's then-President Ayub Khan wrote in his 1967 autobiography, "India's ambition [is] to absorb Pakistan or turn her into

a satellite. . . . From the day of Independence, Pakistan was involved in a bitter and prolonged struggle for her very existence and survival. . . . Indian efforts in the field of foreign policy were all directed towards one aim, the isolation of Pakistan and its disintegration.”²⁸ For Pakistanis, their decisive defeat and bifurcation in the 1971 Indo–Pakistani War seemed to confirm Ayub Khan’s warning. After Bengalis declared independence, India overwhelmed Pakistan’s forces and severed East Pakistan from the west, creating the newly independent state of Bangladesh in just 13 days.

More than 40 years have passed since the events of 1971, but the passage of time has done little to reverse Pakistan’s inclination to view India through a dark lens. As prominent Pakistani academic and defense analyst Zafar Jaspal writes, “The overwhelming majority in Pakistan believe that if the balance of power were heavily skewed in favor of India, it would be likely to launch a hegemonic war against Pakistan.”²⁹ According to Jaspal, this distrustful view is shared at the highest echelons of the Pakistani government. A 2010 meeting of Pakistan’s National Command Authority, for example, accused India of a “hegemonic mindset, oblivious of dangerous implications of adventurism in a nuclearized context.”³⁰ That same year, General Kayani remarked, “Proponents of conventional application of military forces, in a nuclear overhang, are chartering an adventurous and dangerous path, the consequences of which could be both unintended and uncontrollable.”³¹ Although Pakistan’s paranoia appears overwrought, it has been fueled somewhat by mixed messages regarding New Delhi’s views of limited warfare. Brig Gurmeet Kanwal, Indian Army, retired, for instance, contends that a majority of India’s senior army officers advocate deep strikes in lieu of limited offensives to “achieve substantial gains in as early a time frame as militarily possible.” These officers emphasize that, even in the context of limited hostilities, India is “prepared to upgrade its military response to ‘all out’ conventional war if the situation so demands.”³²

Pakistan’s deep-seated fear of Indian hegemony and war aims would have escalatory implications in a future armed conflict. If India launches a ground invasion across the international border, Pakistan is likely to misread New Delhi’s intentions and interpret the attack as a prelude to an existential sledgehammer blow. This calculation is even more probable amid the fog of war, where initial haziness regarding the scale of the Indian attack—and concerns over deception—would encourage worst-

case preparations³³ Pakistan is therefore likely to confront India with a sweeping countermobilization, increasing the risk of an escalation spiral. As Pakistan's ex-Foreign Minister Abdul Sattar has cautioned, "There is no concept of limited war between two rival countries. If a country starts a war on a limited scale . . . anything can happen."³⁴

Many Indian commentators are nonetheless optimistic that conditions exist for conventional war under the nuclear overhang.³⁵ Concomitant with any Cold Start incursion, the Indian government would endeavor to assure Pakistan and the international community—through public statements and private channels—that no permanent changes to territorial boundaries were sought, so as to mitigate the potential for escalation. However, it is uncertain that Islamabad would take these signals at face value. Public statements are problematic for signaling because the adversary can misconstrue the intended audience.³⁶ Though New Delhi and Islamabad also maintain direct crisis hotlines, communications during peak tensions are often sporadic, and in some instances, both sides have dismissed the reliability of the information shared.³⁷ Communicating intentions to an adversary is fundamentally difficult in war and even more so in the Indo-Pakistani context, given the level of historical baggage, animus, and mistrust that plagues the bilateral relationship.

Despite Islamabad's pessimistic construct of Indian intent, the Pakistan Army has gone on the record to say that it plans for an adversary's capabilities, not its intentions.³⁸ Even if this is the case, Pakistan would need to muster a spirited defense in a war with India, as the economic and conventional military gap between the two countries has widened markedly over the last decade. According to World Bank figures, in 2001 the Indian economy was 6.8 times larger than that of Pakistan (\$494 billion versus \$72.3 billion). In 2013 Indian gross domestic product dwarfed Pakistan's by a factor of eight (\$1.86 trillion versus \$232.3 billion).³⁹ A similar gap exists in annual defense expenditure. In 2001 the Indian defense budget was \$15.6 billion versus Pakistan's \$2.6 billion.⁴⁰ In 2014 the figures amounted to \$45.2 billion versus \$6.31 billion.⁴¹ Thus, over this 14-year period, India began with a six-fold advantage in defense spending and currently outpaces Pakistan by a factor of seven.

Predictably, this financial asymmetry has affected the conventional balance of forces in South Asia. For one, India is able to sustain a larger standing military, with 1,346,000 active-duty personnel compared to Pakistan's 643,800.⁴² In addition, India has been able to field tanks,

aircraft, and naval platforms in greater numbers and of more modern varieties than its western neighbor. In terms of third-generation main battle tanks (MBT), India currently operates over 800 Russian-designed T-90S models and 124 indigenous Arjun MBTs compared to Pakistan's indigenous 385 Al-Khalid tanks and 320 imported Ukrainian-built T-80UDs. India enjoys an even larger advantage in second-generation MBTs, with 1,950 Russian-built T-72M1s versus Pakistan's 275 Chinese-designed Type-85s. The force disparity is also pronounced in the air domain. The Indian Air Force has 881 combat-capable aircraft, over 300 of which are fourth-generation fighters (Su-30MKI Flanker, Mirage 2000s, and MiG-29s of various models). Pakistan operates only 125 fourth-generation fighters (JF-17 Thunders and F-16 Fighting Falcons) out of its entire combat-ready fleet of 450. As for naval figures, India has 14 attack submarines, two aircraft carriers, 12 destroyers, 13 frigates, and two dozen guided missile corvettes. The Pakistan Navy, for its part, is comprised of five attack submarines, 10 frigates, and two squadrons of guided missile patrol boats.⁴³ Shuja Nawaz, former director of the Atlantic Council's South Asia Center, summarizes Islamabad's concern over India's burgeoning military advantage as follows:

India's growing economy and armed forces, and especially its rapid development of a massive force projection capability, continues to be a concern to Pakistan. . . . [With a] large air force and navy with aircraft carriers, poised to fill the gap in the Indian Ocean created by the disappearance of the Soviet Union and the eventual retreat of the United States, India may well become the region hegemon that Pakistan and its other smaller neighbors fear.⁴⁴

This glaring asymmetry would cast a further shadow on Indian efforts to signal limited war aims to Pakistan; it might even compel Pakistan to strike first if it believed an invasion were imminent, in a gambit to demonstrate resolve.⁴⁵ It is necessary to point out, however, that much of India's military might—three of its 13 army corps and nine of its 35 air wings—is garrisoned throughout India's eastern provinces, far from the Indo-Pakistani border. These forces are tasked with deterring and responding to any Chinese landgrab in the Indian province of Arunachal Pradesh—territory that Beijing claims as South Tibet. In addition, several of India's attack submarines and nearly half of its primary surface combatants are home-ported along India's eastern coast and the Andaman and Nicobar Islands.⁴⁶ Although this means Pakistani defense plans

need not account for the full combat potential of the Indian military, India's overall advantage is nonetheless onerous. For one, India plans to reinforce its eastern flank by raising a new mountain strike corps (XVII), to be headquartered in Panagarh, West Bengal, by 2021–22, which could free up additional Indian ground forces to respond to a flare-up with Pakistan.⁴⁷ India's air forces, meanwhile, can be reoriented quickly in a crisis or conflict, and the Indian Navy's western fleet alone outsizes the entire Pakistan Navy.

Capabilities aside, the sheer distrust of India evident in Pakistani defense literature and official statements suggests that, in a hypothetical Cold Start contingency, Pakistan is liable to interpret India's motives as hegemonic rather than limited. It is therefore likely Islamabad will order a disproportionate (if not complete) mobilization when Indian strike units cross the international border—a move that will alarm New Delhi and prompt India to deploy additional forces for strategic balancing, potentially catalyzing an escalation spiral.

Pakistan's Geographic Vulnerabilities

Another escalation factor in any future Indo–Pakistani conflict will be Pakistan's acute geographic vulnerability to ground invasion. The border with India is long (more than 3,300 km, including the LOC in Kashmir), and Pakistan has a relatively narrow waistline, limiting its strategic depth.⁴⁸ Moreover, several of Pakistan's key population centers, motorways, and railways are within easy striking distance of the Indian border. In the event of an invasion, Pakistan is likely to countermobilize with full force as a hedge against the encirclement or cutoff of these vital points. Yet Pakistan's geographic curse is also an advantage that will enable it to quickly marshal its troops to the front lines.

A number of major Pakistani urban centers sit in close proximity to the Indian border—especially in Punjab, where the riverine terrain is amenable to higher population densities. The city of Lahore—Pakistan's second-largest in terms of population—is a critical railway hub and cultural center just 20 km from the Wagah border crossing into India. North of Lahore lie the cities of Sialkot and Gujranwala, sited 15 km and 50 km respectively from the border. Both cities are primary stops in Pakistan's north-south railway network and are possible targets of a Cold Start offensive. Indian defense analyst Bharat Karnad, for example, has spoken openly about the logic of a so-called “Sialkot grab.”⁴⁹ In ad-

dition, Lahore and Gujranwala are situated along Pakistan's National Highway N-5, on a segment known as the Grand Trunk Road. Highway N-5 is the main motorway connecting north and south Pakistan; it is a major vulnerability for Pakistan and a strategic prize for an Indian Army commander.

Vulnerable cities south of Lahore include Okara (60 km from the border) and Bahawalpur (100 km from the border). Though Bahawalpur is comparatively distant from the international boundary, the terrain to the east and southeast of the city is a combination of plains and open desert. This topography is highly suited for tank maneuver and could be spanned quickly by Indian forces. Both cities are threaded by Highway N-5 and Pakistan's primary north-south railway, making them alluring targets for an Indian war strategist looking to sever Pakistan's ground lines of communication. Further south is the metropolis of Karachi, the capital of the southeastern province of Sindh, which is Pakistan's financial capital and principal seaport as well as the third-largest urban center in the world.⁵⁰ While land forces are unlikely to threaten Karachi due to its position west of the Indus River, the city could nonetheless fall victim to an Indian naval blockade or airstrikes given its strategic significance and military infrastructure, which consists of an air force base, submarine dockyard, marine base, naval air station, and the headquarters of the Pakistan Army's V Corps.

One of Pakistan's greatest vulnerabilities also lies in the province of Sindh, where India's Ramgarh salient, northwest of the Indian city of Jaisalmer, Rajasthan, juts into Pakistani territory. Pakistan has several critical transportation lines a short distance from the edge of this salient. First is the aforementioned Highway N-5, which is a mere 40 km from the Ramgarh salient at its closest point. Second is Pakistan's north-south railway—a high-throughput, dual-track railroad that runs alongside Highway N-5. Third is the Indus River, which runs roughly parallel to Highway N-5 and the north-south railroad in Sindh province and southern Punjab. Again, these linkages are all tempting and reachable targets for Indian strategists seeking to quickly cut off Pakistan's north-south supply lines. Doing so would hamper Pakistan's ability to use seaborne trade arriving in Karachi to replenish the war effort. As a hedge against this possibility, Pakistan maintains a separate north-south motorway (Highway N-55) and railway off the western bank of the

Indus River. The railway, however, is not a main line but a branch line, and its throughput capacity is therefore limited.

Pakistani analysts are cognizant of these geographic vulnerabilities and contend they would cause a limited ground incursion by India to escalate into something larger. According to Brig Feroz Hassan Khan, Pakistan Army, retired, "Pakistan sees Indian capabilities arrayed against geographically vulnerable features and the narrow waistline in Punjab and Sindh. Pakistan's armed forces cannot afford to trade space in a war with India. Its communication lines and population centers are vulnerable to invasion with even a minor force."⁵¹ Brig Khurshid Khan, Pakistan Army, retired, argues that Pakistan's vulnerability is so acute that it will force Islamabad to respond to even a limited incursion with full strength. He writes, "Due to geographical constraints, Pakistan would not have the flexibility to lose space in its strategically important areas. Therefore, its army would definitely fight with its full potential to stall the Indian offensive at all levels."⁵² The essential premise underlying the Pakistani argument here is one of military necessity. Having so much to potentially lose, Pakistan is likely to respond vigorously to an Indian invasion—limited or otherwise.

Pakistan has sought to compensate for its geographic exposure by garrisoning its ground forces close to the international border, so as to compress its mobilization timelines. Six of the Pakistan Army's nine corps headquarters, for example, are located east of the Indus River. Pakistan also has built army division headquarters and cantonments close to many of the at-risk population centers outlined above. In Punjab province, division headquarters are located in Gujranwala, Sialkot, Lahore, Okara, and Bahawalpur. Farther south, in Sindh province, Pakistan has cantonments in Pano Aqil and Hyderabad. Pakistan also has some recessed echelons, for example II Corps in Multan, which are positioned in such a way that they can respond to a contingency in either Punjab or Sindh.⁵³

Pakistan's forward garrisoning of troops, coupled with its relatively short interior lines of communication (compared to sprawling India), will allow Islamabad to marshal its forces more quickly than New Delhi in a crisis.⁵⁴ According to Brig Shaukat Qadir, Pakistan Army, retired, Pakistan should be able to mobilize in approximately one-third the time it takes India to do so. He writes, "When I was serving, it used to take Pakistan seven days to assemble its forces while India took 21. Though

both sides may have reduced their mobilization period since then, the ratio of time would be about the same.”⁵⁵ Khurshid Khan corroborates Qadir’s assessment, noting, “Because of short lines of communication, Pakistan Army is likely to be effective at a point of its own choosing before India inflicts damage.”⁵⁶ In addition to its ability to marshal its forces quickly, Pakistan has numerous passive defenses—man-made canals, barricades, minefields, and other prepared obstacles—that would increase ground friction and slow an Indian advance. These passive defenses are particularly concentrated in the Punjab region.⁵⁷

A significant portion of the Pakistan Army, however, cannot be re-located closer to the international border in peacetime because they are devoted to counterinsurgency (COIN) duty against the Tehrik-e-Taliban Pakistan in the mountainous northwest province of Khyber Pakhtunkhwa, bordering Afghanistan. A number of analysts agree that if conflict breaks out with India, Pakistan would immediately redeploy these COIN forces—approximately 100,000 army regulars—to the eastern front.⁵⁸ Analysis by Jane’s Information Group, a subsidiary of IHS, Inc., suggests this redeployment would be fairly rapid thanks to Pakistan’s extensive railway architecture. In 2002, for example, echelons as high as the division level were able to deploy from border to border within a week’s time.⁵⁹ It is likely these mobilization timelines have been further compressed in the intervening decade-plus, but as Christopher Clary points out, there is a potential for delays in any move from the west to the east because the COIN forces are “spread out in counterinsurgency operations rather than stationed in garrisons ready to mobilize.”⁶⁰

On balance, however, Pakistan appears to wield a mobilization edge over India. While this is welcome news for Pakistani defense planners, it could have dire implications for escalation. Pakistan’s ability to quickly mount an effective defense against a Cold Start invasion could produce a series of localized stalemates and greatly extend the duration of the conflict.⁶¹ New fronts could open as both sides induct additional troops and leverage airpower to break the stalemates and preserve strategic balance. In this way, Pakistan’s geography could precipitate the vertical and horizontal escalation of Cold Start into a full-scale conflict.

It is difficult to see how India could prevent a limited ground invasion of Pakistan from escalating, given the geographic high stakes involved for Islamabad. An Indian breakthrough assault, if successful, could en-

circle key Pakistani population centers and cut off critical motorways and railways in the beginning days of a conflict, complicating military logistics and putting Islamabad in a precarious bargaining position. Pakistan would therefore have a compelling incentive in a Cold Start contingency to marshal its forces along the entire length of the international border in an effort to reinforce these vital areas. Fortunately for Pakistan, its forward garrisoning of forces will allow it to muster a rapid defense, but doing so will have the second-order effect of dilating the ground battle with India, creating avenues and incentives for both sides to escalate the conflict further.

Pakistani Army Doctrine

To further validate the contention that Pakistan would escalate in response to a limited Indian invasion, one must examine the operating principles outlined in the Pakistan Army's latest doctrinal publication, *Pakistan Army Doctrine 2011: Comprehensive Response*. The doctrine outlines a series of fundamental guidelines by which the Pakistan Army would manage itself during a conflict against an adversary—one that is left nameless but clearly insinuated to be India.⁶² As the doctrine states, its purpose is to serve as a “vital link between conceptual thought and practical manifestation.”⁶³ *Comprehensive Response* therefore provides a glimpse into what the Pakistan Army's overall strategy might be in a hypothetical fourth Indo–Pakistani war.

A reading of *Comprehensive Response* suggests that, if war with India occurs, the Pakistan Army will endeavor to mobilize rapidly with a larger force and take the fight to Indian soil. These operating principles imply the doctrine is intentionally geared toward the escalation of conflict. Though upping the ante would appear counterintuitive given Pakistan's conventional military disadvantage against India, the logic is actually simple. By engaging in risky behavior, Pakistan intends to, in the words of Thomas Schelling, “leave everyone just a little less sure that the war can be kept under control.”⁶⁴ Pakistan's aim is to paralyze New Delhi with uncertainty—that is, the possibility Cold Start could spiral into a nuclear conflagration.

The principle of rapid mobilization takes center stage in *Comprehensive Response*. The doctrine estimates that hostilities could break out at any time, with “very short notice”—an oblique reference to the blitzkrieg envisioned in India's Cold Start concept. The doctrine therefore

asserts that “all [Pakistan Army] formations organize their administrative and routine activities in a manner that effective combat potential can be generated within 24 to 48 hours from the corps to unit level and two to three days at the Army level.”⁶⁵ Recalling the original requirement of Cold Start was for India’s integrated battle groups to mobilize and begin offensive operations within 72 to 96 hours of receiving orders, Islamabad is implying that its objective is to be able to mobilize and deploy the entire Pakistan Army prior to any Indian attempt at cross-border ingress.

Pakistan hopes that by beating the adversary to the mobilization punch, it can achieve a decisively favorable ratio of deployed Pakistani troops to deployed enemy forces at the onset of conflict. As the doctrine states, “the force ratios [between Pakistan and the adversary] must ensure success in battle.”⁶⁶ The doctrine notes the Pakistan Army’s aim is to “[concentrate] requisite combat power for defensive and offensive operations to achieve decisively superior combat potential at the point of decision.”⁶⁷ Pakistan assumes it must mobilize quickly and compellingly in a conflict with India because India’s larger and qualitatively superior military is likely to outlast Pakistan’s in a prolonged conventional war. Pakistan’s theory of victory is to take advantage of its short interior LOCs, mobilize quickly, and seek early checkmate or deter hostilities altogether.

To facilitate rapid mobilization, *Comprehensive Response* notes that Pakistan is developing a “Forward Leaning Logistics” system to ensure its forces are kept well-supplied—without interruption—throughout the duration of a conflict.⁶⁸ To achieve this, Pakistan aims to construct a dispersed network of forward logistics facilities—for example, supply depots, fuel and ammo dumps, and so forth—in proximity to likely battle areas, so ground forces can sustain themselves without requiring a supply line to a main operating base. As the doctrine states, “The combat supplies of defensive and offensive forces [are] to be prepositioned well forward to ensure early readiness of combat forces, self-sustenance and reduced dependence on base logistics installations.”⁶⁹

Besides rapid mobilization, the second key operating concept identified in *Comprehensive Response* is that of the counteroffensive—a concept otherwise known in Pakistani parlance as “offensive defense” or “riposte.” The premise is that Pakistan will not be content to merely “stand and fight” in a conflict with India, but will instead seek out opportuni-

ties to take the battle to Indian soil. *Comprehensive Response* states the purpose of the riposte is to “create further disincentives or leverage by seizing initiative from the aggressor.”⁷⁰ Elsewhere it states, “Offensive action permits commanders to exercise initiative and impose their will upon the adversary, setting the pace and determining the course of battle as well as exploiting [the] enemy’s transient or enduring weaknesses.”⁷¹ It bears mention that the riposte concept is not a late-breaking addition to Pakistani doctrine; it was first demonstrated in 1989 during Exercise Zarb-e-Momin, directed by Gen Mirza Aslam Beg. Nonetheless, the inclusion of the riposte in *Comprehensive Response* is evidence that Pakistan is still committed to the concept.

What might a Pakistani riposte look like, if put into action? In terms of forces utilized, Pakistan is likely to rely on its two armor-heavy strike corps (I and II), headquartered in Mangla and Multan, respectively.⁷² As for geographic focus, according to S. Paul Kapur, a Pakistani counter-offensive might seek to cut India’s ground LOCs into Kashmir.⁷³ The most obvious target is India’s National Highway 1A, the thoroughfare connecting Indian-administered Kashmir with Indian Punjab and the rest of the country. National Highway 1A is less than 40 km from the Pakistani city of Sialkot (the location of a major army cantonment) and is just 8–10 km from the international border. Another riposte option for Pakistan is to launch “diversionary offensives” southward into Indian Punjab and Rajasthan.⁷⁴ Doing so would allow Pakistan to relieve pressure on its vulnerabilities in Sindh province, particularly Highway N-5 and the north-south railway. Indeed, the logic of diversion is central to the riposte concept; Pakistan can alleviate the pressure of an Indian assault in one sector by counterattacking in another, thereby forcing Indian troops to divert.

Comprehensive Response notes the Pakistan Army is taking steps to bolster its ability to prosecute the riposte. Specifically, Pakistan plans to restructure its defensive holding formations garrisoned along the international border to enable them to perform “transfrontier” offensives. The aim is to achieve modularity, such that brigade-sized units could be “carved” away from the holding formations to undertake independent offensive actions.⁷⁵ The ideal end state for Pakistan, in other words, is that its holding forces acquire the ability to “form part of and contribute to an offensive effort.”⁷⁶

Pakistan's plan to restructure its holding formations appears to be a page taken from India's playbook. India, too, has taken steps to transform its defensive holding corps into pivot corps capable of pivoting between defensive and offensive actions. By developing pivot formations of its own, Pakistan hopes to obtain the operational flexibility to prosecute offensive maneuvers through windows of fleeting tactical opportunity. If Pakistan relied solely on its strike corps to implement the riposte concept, it would have more difficulty capitalizing on transient vulnerabilities in India's defensive line. This is because Pakistan's strike corps are not garrisoned as close to the international border as the holding corps and would therefore take some time to reach their designated battle areas.

Pakistan believes that its willingness to escalate will either deter New Delhi from cross-border adventurism in the first place or achieve some degree of intrawar deterrence. The escalation logic of *Comprehensive Response* is encapsulated neatly in the document's assertion that "our ability to exploit opportunities and *the will to upscale the scope of violence* creates retrospective politico-military disincentives for the aggressor" (emphasis added).⁷⁷ These disincentives are rooted in uncertainty. The doctrine is an attempt to make India unsure of its ability to contain the overall conflict and prevent Pakistani use of tactical nuclear weapons. Moreover, Pakistan may believe that an escalation-centric strategy would spur the international community to intervene and force a ceasefire, precisely out of concern over the possibility of nuclear use. This risk manipulation strategy is fraught with peril, however, because a robust Pakistani countermobilization would force India to induct additional ground and air power to the battle areas to support its front lines and balance against a riposte, blurring the distinction between limited and general war. This action-reaction dynamic and its consequences are analyzed further in the following section.

Operational Considerations for an Indian Limited-Aims Ground Offensive

India would find itself in a serious escalation dilemma if it opted to execute a shallow ground invasion of Pakistan. The dilemma is that there are several supporting actions the Indian military would need to take to improve the odds of operational success, yet Pakistan is likely to perceive these actions with alarm and respond accordingly. Specifically, these ac-

tions include (1) the mobilization of India's three strike corps, (2) steps to obtain localized air superiority over Pakistan in support of the ground assault, and (3) the deep interdiction of Pakistani reinforcements to prevent them from reaching the battle areas. Each action and its expected consequences are examined in detail below.

India is likely to mobilize its three strike corps during any limited-aims ground campaign for two reasons. The first is to lend "offensive surge capability" to the war effort, since the strike brigades currently attached to India's pivot corps lack the requisite firepower to "bite and hold" Pakistani territory.⁷⁸ As Indian Brigadier Kanwal contends, initial offensive thrusts would be "exploited by one or more strike corps, where possible, but without crossing Pakistan's nuclear red lines."⁷⁹ Col Ali Ahmed, Indian Army, retired, asserts the strike corps will be used—at a minimum—to break any stall in the preliminary offensive.⁸⁰ The second reason for strike corps mobilization is to provide assurance against a Pakistani riposte into Indian territory. India, after all, has its own share of geographic vulnerabilities, including exposed population centers and the critical motorway into Kashmir. According to Maj Ikram Sehgal, Pakistan Army, retired, India will therefore be forced to orient and assemble its strike corps in such a way that "caters" to a Pakistani counter-offensive.⁸¹

Kanwal corroborates Sehgal's assessment, noting, "As would be expected, each one of [India's strike corps] is ready to act . . . to stabilize the situation if the defensive battle of the holding (or pivot corps as these are now called) does not go as planned and appears to become unmanageable."⁸² Since Pakistan's counteroffensive would necessarily occur in Kashmir, Indian Punjab, or Rajasthan, India might opt to assemble its strike corps in a north-middle-south orientation behind the international border. This deployment scheme would force Pakistani defense planners, in turn, to balance their own forces across a wider front, spreading them thin.

In any case, Pakistan will interpret the mobilization of India's three strike corps as an extremely escalatory step warranting a forceful counter-mobilization. Historical precedent is illustrative here, as Islamabad interpreted India's deployment of two strike corps to Rajasthan in 1986–87 during Exercise Brasstacks as a dress rehearsal for war. Pakistan responded by assembling its I and II Corps opposite Indian Punjab, setting off a crisis that nearly erupted into hostilities.⁸³ Similar mobiliza-

tion dynamics occurred after the 2001 parliament attack and are probable during a Cold Start contingency given Pakistan's military doctrine, geographic exposure, and strategic anxieties. Escalation management during an active conflict, however, is inherently more difficult than during a peacetime crisis such as Brasstacks, as troops would be joining an active battlefield rather than a cross-border standoff.

In addition to mobilizing its strike corps in the background, India would need to achieve localized air superiority in the sectors where its ground forces are conducting offensive operations inside Pakistan. Without control of the skies, India's ground assault would be decimated by the Pakistan Air Force's fleet of fighter-bombers. To avert this outcome, India at the very least would need to conduct localized combat air patrol missions to interdict any Pakistani aircraft that threatened Indian troops. It is also probable India would need to attrite a selection of Pakistani air bases by cratering runways, destroying hangars, and disabling communications towers. India could achieve this objective through deep interdiction by manned aircraft or from a standoff distance with cruise missiles, such as the supersonic BrahMos (300–500 km range).⁸⁴ Naturally, all of the above would darken Pakistan's reading of India's intentions, as it would vitiate Pakistan's conventional forces and could inadvertently damage any nuclear warheads or components stored at the air bases. To compensate for any attrition, Pakistan might lean more heavily on its nuclear deterrent. At a minimum, Pakistan would likely retaliate in kind against Indian air bases, potentially with a volley of air-launched cruise missiles, for example, the 300-km range Ra'ad. According to Pakistani diplomat Maleeha Lodhi, "For Pakistan, lacking sufficient frontline, high-tech aircraft, medium and short-range missiles are expected to play a conventional war-fighting role. . . . [Pakistan] is likely to feel compelled to operationally deploy its missiles in a conventional role if the threat posed by India's conventional superiority becomes more acute."⁸⁵

Another supporting action India is likely to initiate is the deep interdiction of Pakistani reinforcements, so as to prevent them from joining the front lines and engaging Indian ground forces. To the extent Pakistan successfully deploys additional troops to the battle areas, India loses its ability to contain the scale of the conflict. India may therefore opt to delay these reinforcements via airstrikes against the forces themselves or by degrading and destroying Pakistan's transportation infrastructure. Clary notes that retired Indian officers in public forums have discussed

this very strategy, utilizing “some combination of Indian airpower and long-range ground systems, such as the Smerch multiple rocket launch system,” to disrupt Pakistan’s ability to reinforce its front lines.⁸⁶ Again, however, all of this will cut into Pakistan’s conventional war-fighting capacity and could prompt Islamabad to launch conventional missile strikes or threaten the deployment of nuclear weapons. India’s quandary, therefore, is that interdicting Pakistani reinforcements would be escalatory, but allowing them to reach the front lines would similarly expand the conflict.

Overall, India will have great difficulty calibrating a limited ground offensive in a way that does not precipitate an escalation spiral. In essence, India’s quandary reflects one of the intrinsic difficulties of limited war—that is, how to prevail and terminate hostilities against an adversary whose military capabilities have not been exhausted. As John Mearsheimer warns, “There is a real danger that a successful limited attack will evolve into a protracted war—simply because the defender, who has not been decisively defeated, will continue fighting.”⁸⁷

Nuclear Escalation Risks

While the exact circumstances that would prompt Pakistan to deploy a tactical nuclear weapon (Nasr) to the battlefield are unknown (given Pakistan’s intentionally ambiguous nuclear redlines), it is reasonable to assume Nasr would be deployed if India significantly degraded Pakistan’s conventional forces. Still, other analysts expect Pakistan to deploy TNWs much earlier in a crisis or conflict, to threaten Indian troops during their initial penetrations across the international border.⁸⁸ Regardless of deployment sequencing, Nasr will imbue the battlefield with serious nuclear escalation risk, as the system carries the potential for premature and unauthorized use.

How might the premature or unauthorized use of TNWs occur in the midst of a Cold Start offensive? To answer this question, a cursory review of nuclear command and control (C2) articulation modalities is required. Pakistan has two options at its disposal for asserting C2 over its battlefield nuclear deterrent. Option one is for the National Command Authority (NCA) in Islamabad to maintain centralized political control over launch authority. The second option is to decentralize C2 by predelegating launch authority to field commanders.

Comprehensive Response notes that Pakistan's nuclear C2 is centralized under the NCA.⁸⁹ While a centralized C2 paradigm makes sense for strategic, high-yield nuclear weapons, it is problematic in the context of TNWs because it makes the weapons tactically unresponsive to shifting battlefield dynamics, impairing their military decisiveness and overall deterrence utility. In the time it would take for a Nasr battery commander to request launch authority from the NCA, for the NCA to deliberate and arrive at the political consensus to use nuclear weapons, and for the launch codes to be transmitted to the field commander and authenticated, the prospective target—for example, an Indian tank battalion—could have overrun the battery, moved out of range, or intermingled with friendly forces. US Army doctrine from the 1970s, in fact, assumed a 24-hour delay for TNW employment authorization to be granted.⁹⁰ Another problem with centralized C2 is that the launch codes, which are ostensibly transmitted by radio signal, are susceptible to jamming and could be rendered unintelligible to the weapons operators.

These drawbacks are so damaging to the deterrence and war-fighting utility of TNWs that Pakistan may quickly abandon centralized C2 of its tactical nuclear forces in a conflict with India. Pakistan's alternative, then, would be to adopt decentralized C2, wherein field commanders would receive predelegated nuclear launch authority.⁹¹ While predelegation would make the TNWs more tactically responsive, it introduces the risk of premature or unauthorized use.

Consider a scenario in which the predelegated commander of a Pakistani TNW battery, in the fog of war, is surrounded by an Indian tank battalion and forced to “use or lose” nuclear weapons. In this scenario, firing the weapons may seem rational from a tactical military standpoint but could be premature and counterproductive from a strategic standpoint, depending on the dynamics of the broader battle. Thus a major downside to predelegation is that it transforms the fundamentally political decision of whether or not to use nuclear weapons into a collection of localized judgment calls by military officers. Decentralized C2 also poses the risk, however remote, of unauthorized use by the proverbial “mad major” who flagrantly disobeys employment guidelines and sets off a nuclear disaster.⁹² The escalatory implications of a tactical nuclear strike against invading Indian forces are difficult to assess, but the repercussions would be staggering if India—in spite of Pakistan's belief to the

contrary—follows through with its avowed nuclear doctrinal policy of massive retaliation.

Notably, retired Indian flag officers in numerous Track II forums have stressed that India will not wait to be bombarded by TNWs but will instead aggressively target and destroy any missile launchers it detects on the battlefield.⁹³ Brigadier Kanwal concurs, writing that India will proactively employ a combination of missiles, artillery, and airstrikes against deployed Pakistani batteries.⁹⁴ Although limitations in Indian intelligence, surveillance, and reconnaissance would make finding the batteries a challenging proposition, the search area would be mitigated by virtue of the Nasr's diminutive 60-km range, which implies the batteries would be deployed fairly close to the international border. To the extent India successfully locates and degrades Pakistan's battlefield nuclear deterrent, the pressure to employ the weapons will increase.

In the final analysis, the deployment of TNWs as a deterrence signaling or war-fighting measure against an Indian invasion would likely drive New Delhi and Islamabad up the escalation ladder. While it is true Pakistan has other nuclear deterrence signals at its disposal besides Nasr, for example, the raising of nuclear alert levels, veiled diplomatic pronouncements that "all options remain on the table," dispersing nuclear assets for survivability, and ballistic missile flight tests, it has developed Nasr for the express purpose of pouring "cold water on Cold Start."⁹⁵ This suggests—quite dangerously—that Pakistan believes its TNWs have conferred a degree of escalation dominance over India. At the very least, it implies that Pakistan sees TNWs as a risk manipulation device, akin to the Comprehensive Response doctrine. Thus, if New Delhi decides to launch a series of limited, cross-border ground offensives, the possibility that Indian forces will encounter Nasr cannot be ruled out.

Conclusions

This article has attempted to map how mistrust, (mis)perception, geography, and action-reaction dynamics could magnify a limited war in South Asia into a major conflagration. Although it would seem counter-intuitive for a conventionally weaker state—in this case, Pakistan—to counterescalate against a stronger adversary, the logic of military necessity and the temptation to spook India through risky behavior would trump restraint.⁹⁶ Recall that Cold Start is premised on the assumption

that India can assert escalation control and prevail militarily against Pakistan without fear of crossing its ambiguous nuclear redlines. Through a combined threat of robust countermobilization, riposte, and TNWs, Pakistan transforms Cold Start into a potential springboard for total war and nuclear ruin. Pakistan's objective, therefore, is to imbue Cold Start with escalation uncertainty. Insofar as New Delhi doubts its ability to prevent a limited war from spiraling out of hand, it may be deterred from initiating a Cold Start offensive altogether or deterred within an intrawar context. Pakistan might also calculate that escalation would hasten international pressure for a UN-mandated ceasefire.

In light of the escalation concerns associated with Cold Start, there is evidence that India's strategic community may be moving away from the idea of a limited ground invasion of Pakistan in favor of concepts that might be less risky. In February 2014, former Indian intelligence official Ajit Doval delivered a speech at SASTRA University in Tamil Nadu, where he discussed his theory of the defensive offense—a strategy for waging a “gray zone” coercion campaign against Pakistan without the use of ground troops:

[In the defensive offense], we start working on the vulnerabilities of Pakistan. It can be economic, it can be internal security, it can be political, it can be their isolation internationally . . . exposing their terrorist activities . . . it can be anything. It can be defeating their policies in Afghanistan, making it difficult for them to manage internal political balance or internal security. . . . There is no nuclear war involved in [defensive offense]; there is no engagement of troops.⁹⁷

Doval's statement appears to be a tacit admission that the engagement of ground troops in the South Asian theater carries an inherent potential for nuclear escalation, thus necessitating a strategic shift away from the notion of a limited ground war. With Doval's appointment in May 2014 as India's fifth national security adviser, his defensive offense concept may gain traction in New Delhi in the coming years. In fact, in May 2015, Indian Defense Minister Manohar Parrikar seemed to endorse gray zone coercion (specifically the use of proxies) as a means of punishing Pakistan for the terrorism emanating from its borders. Speaking at a public forum in New Delhi, Parrikar remarked, “We have to neutralize terrorists through terrorists only. Why can't we do it? We should do it. Why does my soldier have to do it?”⁹⁸

Although this article has focused on the likely breakdown of intrawar deterrence following the initiation of a limited ground campaign by

India, the findings are also germane to deterrence and escalation management writ large. Rational deterrence holds that nuclear-armed adversaries should be dissuaded from engaging in reckless behavior for fear of catastrophic escalation.⁹⁹ This fear makes deterrence resilient but not assured.¹⁰⁰ Stability in an adversarial deterrence dyad can unhinge if both countries believe they wield escalation dominance over one another. This conviction can dissuade either side from backing down in a crisis or conflict, increasing the probability and consequences of war, respectively. Ambiguous redlines, meanwhile, are an uncertain firebreak, as the attacker can underestimate the defender's limits.¹⁰¹ Applying these concepts to South Asia, "India might conclude that it can launch an invasion without provoking a nuclear reprisal, while Pakistan might believe that it can employ [tactical] nuclear weapons without triggering a nuclear exchange."¹⁰² In contrast, if a prospective attacker doubts its ability to control escalation and circumvent the defender's nuclear redlines, deterrence is strengthened, evoking Thomas Schelling's concept of "the threat that leaves something to chance."¹⁰³ However, this might drive the attacker to seek less-escalatory coercive tools, in keeping with the stability-instability paradox.

Apart from escalation dominance, the other factors identified in this article—chronic mistrust, territorial salience, and military necessity—can also ensnare perfectly rational actors in an escalation trap. The high value that states assign to their territorial integrity, for example, can drive a defender to escalate against a ground invasion even if success is doubtful.¹⁰⁴ Escalation risk is amplified further if either belligerent maintains a land force structure optimized for deep strike and maneuver, as this muddles the signaling of limited aims. In some respects, A. J. P. Taylor's argument that World War I was "imposed on the statesmen of Europe by railway timetables" is still instructive for geographically contiguous deterrence dyads and even more so for India and Pakistan, where strike corps elements remain integral to limited war planning.¹⁰⁵ In any event, the conclusions of this article are perhaps best captured by Robert Jervis's warning that "any time military forces are set in motion, there is a danger that things will get out of control The workings of machines and the reaction of humans in times of stress cannot be predicted with high confidence."¹⁰⁶ Indeed, what begins as a limited war in South Asia may quickly assume a life of its own and escalate into the unthinkable. ■■■

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Book Essay

Nuclear Weapons Redux

Roger Gran Harrison

Abstract

According to William Perry, the encouraging trends in nuclear weapons control he help to build in the post-Cold War world have begun to unravel. This has only strengthened his conviction that nuclear weapons pose the most ominous threat to national security. While the views of Perry and his colleagues have faded, other voices are being raised repeating arguments for nuclear war fighting that were familiar 50-years ago. Perry hopes to prevent that, and to remind a new generation of the horrors of nuclear weapons.

* * * * *

My Journey at the Nuclear Brink by William J. Perry. Stanford University Press, 2015, 276 pp., \$85.

At the beginning of William Perry's memoir, *My Journey at the Nuclear Brink*, a nuclear bomb explodes on a busy day in the heart of Washington, DC. Eighty thousand are killed instantly, including the president, the joint chiefs, and most members of Congress. The bombers issue a declaration that more bombs are hidden in five other American cities and will be detonated unless all American troops return from overseas. Billions spent on ballistic missile defense have been in vain; the Washington bomb was delivered in a rented step van. Worse, the talk of a missile "shield" has fostered the illusion of nuclear security and prevented practical steps to prevent the disaster.

Perry's purpose in this "slight memoir" is to shatter that illusion and to warn us that the nuclear danger is growing. Reducing the danger of nuclear weapons has been the theme of his life's "journey," he tells us, since, as a young enlisted man, he stood in the ruins of post-World War II Japan. Eight years later, a newly-minted PhD in mathematics work-

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ing for Sylvania Electronic Defense Systems, Perry had become part of a team working to assess the “range, accuracy, deployment and numbers” of Soviet missiles. In that role, he was instrumental in debunking fears of a “missile gap,” as well as demonstrating that Soviet radars were not precise enough to support the effective antiballistic missile system the Soviets claimed to have deployed.

He describes what amounts to a spiritual awakening during these years. He had been asked to assess how electronic jamming of Soviet intercontinental ballistic missile (ICBM) guidance systems might reduce the effectiveness of a nuclear attack. He concluded that jamming might reduce immediate deaths by two-thirds. However, 25 million people would still die in the first minutes, and many millions more from lingering effects in subsequent decades. He drew from this the conviction that nuclear weapons were a moral outrage. There was no acceptable level of nuclear Armageddon.

The lesson was reinforced when, barely in his thirties but already an established expert in the new field of electronic surveillance, he was a member of a small team that confirmed the presence of nuclear-capable Soviet missiles in Cuba with the range to hit Washington and other East Coast cities. The information his team developed triggered the Cuban missile crisis. Perry recalls that he and his colleagues had not detected that warheads for the Soviet missiles were also present in Cuba or that Soviet submarines with nuclear-tipped torpedoes aboard were present off the Cuban coast. With civilian and military aides pressing Pres. John F. Kennedy to attack Cuba, only Kennedy’s caution, Perry thinks, saved the world from nuclear disaster. The incident galvanized Perry’s own thinking; in the wake of the crisis, “no other path seemed to beckon to me but the one that led into the heart of the challenge to reduce the danger of nuclear weapons.” (p. 5)

Was the young Bill Perry quite as certain of this as the octogenarian Bill Perry remembers? Perhaps not. His life, as he recounts it, would follow many other paths—some far removed from the issue of nuclear weapons. Perry was a success at Sylvania but realized the future did not lie with the vacuum tubes in which Sylvania specialized. So, he and some colleagues pooled their savings to found Electromagnetic Systems Laboratory (ESL), doing surveillance and analysis work for the Pentagon as before but now using much more powerful digital tools. It was the dawn of the computer revolution in military affairs, and Perry was both pioneer and advocate. In 1977, President Jimmy Carter’s Department of Defense came calling, and Perry left the private sector to become Undersecretary of Defense for Research and Engineering. Incoming Secretary

of Defense Harold Brown wanted Perry to leverage digital technologies to “offset” Soviet advantages in numbers of conventional and nuclear forces. Nuclear weapons had been the first offset; technological superiority would be the second. Perry saw the job, he tells us, as a chance to use his expertise for the “prevention of nuclear disaster.” (p. 29) That meant strengthening deterrence by improving conventional forces, and Perry would become a leading proponent of stealth technology, the man who saved GPS from the budget cutters (although he admits that even he did not grasp its full implications), a major backer of precision guidance and of advanced satellite surveillance—in short, one of the founding fathers of the digital revolution in military affairs.

His drive for complex, technologically sophisticated weapons systems was opposed by the “simpler, cheaper, more numerous” school of weapons theorists, including Pierre Sprey, the designer of the F-16 and all-purpose pundit James Fallows. Perry overcame their opposition, but doing so meant compromising other goals, particularly Pentagon acquisition reform. He did not have sufficient political capital, he tells us, to take on both issues at once. Thus, in effect, he sacrificed acquisition reform on the altar of military transformation. The problem, although he does not say so, was that the complex new systems he favored only amplified the shortcomings of the acquisition system he had failed to reform. The result was programs like the ruinously expensive F-35—years behind schedule and tens of billions of dollars over budget. Perhaps Sprey and his colleagues had more of a point than Perry is willing to grant them.

Out of government in the Reagan years, Perry was a prominent critic of Pres. Ronald Reagan’s “Star Wars” ballistic-missile defense program, which was, he thought, needlessly provocative, ruinously expensive, and technologically infeasible. The dream of a Star Wars shield against major powers has long since morphed into a much less-ambitious defense against “rogue actors” without changing Perry’s conviction that the idea of defense against a determined nuclear attacker is a dangerous fraud. Perry also became an avid participant in “track two” meetings, informal gatherings of ex- or would-be officials that play to the particularly American persuasion that, if we can only escape the confines of formal diplomatic exchanges and deal as people, we can solve the intransigent problems of the world.

Perry was to have a second tour at the Pentagon, this time in the Clinton administration, first as undersecretary and then as secretary of defense after Les Aspin was fired. But this time around he seems to have been out of step with the administration he served. There were successes:

the corralling of “loose nukes” left behind when the old Soviet empire receded and a new emphasis on the living conditions of senior enlisted men and women. But on key policy issues, Perry was now more often on the losing side. He thought that the new Russian Federation could be brought into a grand alliance with the West. But that required that the United States to take Russian security concerns into account. Instead, Perry argues, we ignored those interests in the Balkans and pressed heedlessly toward Russian borders with the expansion of the North Atlantic Treaty Organization (NATO) and programs to deploy antimissile systems in Poland and the Czech Republic. Perry also failed to convince Clinton to submit the Comprehensive Test Ban Treaty to the Senate for ratification.

Perry describes a particularly stinging personal defeat on the issue of NATO expansion. He favored it, beginning with Poland, the Czech Republic, and the Baltic nations. But he thought it should wait until the new Russian Federation felt more secure and democracy in Russia was on firmer ground. Sensing the momentum on this issue was against him, he called for a meeting of the full National Security Council. But Richard Holbrooke made short work of Perry’s arguments, and Clinton decided to move ahead. Perry considered resigning.

He continues to think the NATO enlargement decision was in error and brought much unnecessary tension and disruption in its wake. Still, even describing this low point in his career, he offers no criticism of the president, or even of Holbrooke. Unique among recent secretaries of defense, he is not, here or elsewhere in this memoir, to settle scores.

Perry has now been out of government for two decades, and some of the encouraging trends he helped to foment to defuse the danger of nuclear weapons have begun to unravel. This has only strengthened him in the conviction that nuclear weapons pose an immediate and existential threat to civilization. Skepticism about nuclear weapons seems to increase as one nears the inner circle of decision making. So it was with President Kennedy and Soviet premier Nikita Khrushchev during the Cuban missile crisis. So it was with President Reagan, who came to power as the supposed champion of the nuclear hawks but instead set the pattern for nuclear reductions that has been followed by his successors. And so it has been with the so-called “Gang of Four”: George Shultz, Henry Kissinger, Sam Nunn, and Bill Perry. Now they write and lend their names to editorials and articles urging gradual moves toward nuclear zero. As first steps, they propose securing nuclear materials, increasing decision time for national leaders, accelerating nuclear reductions, and increasing transparency. This book is part of that campaign.

Obama's Nuclear Posture Review of 2010, with its emphasis on further nuclear reductions, seemed to fulfill all the hopes of the Gang of Four. But the breakthrough proved illusory, and Perry now fears we have begun a "long backward slide" toward nuclear confrontation. He predicts that the Russia will soon withdraw from the Comprehensive Test Ban Treaty (CTBT) and begin testing warheads for its new generation of ICBMs. That will bring irresistible pressure on the United States, which has never ratified the CTBT, to begin testing new warheads of its own. Other nations will follow, and the structure of nuclear restraint painstakingly built over the seven decades since Hiroshima will be shattered.

Late last year, just as this memoir was appearing, Perry went public in a *Washington Post* op-ed with his opposition to nuclear-armed cruise missiles, which he described as both unnecessary to deterrence and destabilizing. He argued that the latest iteration of the B61 nuclear bomb carried by the new generation stealth bomber is a better option. But many current and former Obama administration officials oppose the guidable, dial-a-yield B61 as the "new nuclear weapon" President Obama had pledged not to develop. They argue it will weaken, if not erase, the nuclear threshold. If so, the two great themes of Perry's life—opposition to nuclear weapons and support for technological innovation—have come together to produce a great irony, for as much as Perry fears nuclear war, the technological innovation he has always championed has been moving his country inexorably forward (with his support) toward the deployment of smaller, more adaptable, more *useable* nuclear weapons. George Orwell called it "doublethink," and it has always been at the heart of nuclear strategy—so much so that even someone as dedicated to the eradication of nuclear war as Perry seems not to notice the contradiction when he goes on record in support of weapons that will (as supporters and opponents agree) expand a future president's "nuclear options."

Perry's memoir is a fair-minded, professionally generous and deeply informed book. I put it down with admiration for its author and thankfulness for his contribution to national security but also with the feeling that, given the dangers he describes, he ought to have been a little less fair minded, a little more willing to breathe fire. Much of what passes for new thinking about nuclear weapons is really old thinking dressed in new jargon, and Perry should have said so. If he had, his book would have reached a wider audience than it is likely to, and his message would receive the national attention it deserves. **SSQ**

Book Reviews

The Puzzle of Peace: The Evolution of Peace in the International System by Gary Goertz, Paul F. Diehl, and Alexandru Balas. Oxford University Press, 2016, 264 pp., \$27.95.

As an empirically based study on the evolution of peace in the international system, *The Puzzle of Peace* is a monograph that breaks new ground in international relations literature. The authors contend that current definitions of peace are negatively defined, leaving scholars and policy makers to think of peace as the absence of violent conflict. Rather than a negative definition, the authors engage the concept of peace on its own terms, reconceptualizing peace in the context of positive interactions between two states in a cooperative relationship. In doing so, they are able to construct a dataset on international peace and provide a series of empirical assessments to determine if the international system has become more peaceful over time. Such work represents the most systematic effort to date in evaluating whether the international system is simply less conflict prone or actually more peaceful—a distinction that should matter for policy makers and academics.

To accomplish this task, the authors begin by making a convincing case that peace as a concept is relatively unexplored. How do we know this? A cursory examination of the conflict literature, for example, makes this quite clear. Most research focuses on the likelihood of violent conflict as the outcome to be explained, with variables including territorial competition, regime type, and rivalry involvement serving as the main causal indicators of a state's willingness to use military force. Unlike violent conflict, however, the authors contend that peace is a relationship and thus must be explained not just by the absence of such indicators—for example, a *lack* of territorial competition increases peace—but rather by the pattern of interactions within a relationship. In other words, a relationship categorized as peaceful should be one that is dominated by cooperative and peaceful interactions—not simply a lack of hostile ones.

This logic and conceptualization of peace lead the authors to the introduction of a peace scale, ranging from very hostile to very peaceful relationships between states in the international system. This peace scale, including the process and criteria for identifying where relationships fall on the scale, is explored in detail in chapter two. The authors also identify five categories along the scale: severe rivalry, lesser rivalry, negative peace, warm peace, and security community and include the types of indicators associated with these categories—presence of war plans, presence of conflicts, status of main issues in conflict, types of communication, types of diplomacy, and types of agreements between states. All together, the peace scale serves as a primary contribution to the field in that it paves the way for a new research agenda on the quality of relationships between states in lieu of a dichotomous hostile or peaceful categorization that obscures a range of diversity in the types of relationships between states. There is a difference,

for example, in the relationship between Israel and Egypt compared to that of France and Germany—even though both relationships often are thought of as “peaceful” in most empirical analyses.

While the creation of the peace scale itself represents an important contribution, the authors return to the original question and employ the scale to explore how the international system changed over the course of the twentieth and early twenty-first centuries. With data dated mostly through 2006, the authors empirically demonstrate that the number of rivalry relationships has decreased over time, while the number of peaceful relationships has increased—with both observations together suggesting a more peaceful system. Also of note is the authors’ finding of warm peace as a post-World War II phenomenon, the explanation for which is tied to the rise of regional economic integration organizations—for example, the European Union—that help develop and strengthen cooperative relationships over time.

The authors do not only evaluate trends and demonstrate that we live in a more peaceful system but also use the second part of the book to put forth a detailed explanation as to why this is the case. In sum, they argue that the development of norms regarding territory (norms against conquest, new states, and territorial change), conflict management, and maritime behavior—for example, the United Nations Convention on the Law of the Sea—have helped to push state relationships in more peaceful directions. Primarily, these norms have motivated states to utilize nonviolent means to address conflicts in lieu of the use of force. The use of these nonviolent means subsequently prepares states to move relationships away from the rivalry and negative peace side of the scale toward warm peace. And although the authors do not explicitly state this, when considered in the context of increasing institutionalization of the system in general (for examples, regional trade agreements and regional security organizations), there exists a more permissive environment for the development of peaceful relationships among states. To this point though, the authors offer words of caution: a majority of state relationships (particularly noncontiguous pairs) may be stuck in a negative peace—something that has potential implications for major and regional power relationships, such as US–Chinese relations.

In sum, *The Puzzle of Peace* is a good start to a new direction of research in the area of peace, utilizing solid empirical data to assess and explain trends of peace beyond the absence of violent conflict. As with any good start, there are a range of limitations to the work, of which many the authors are aware. For example, a greater systematic examination of the relationships within the warm and negative peace categories would be useful. Is the transition from negative to warm peace explained by a straightforward functionalist approach to state relationships (augmenting existing norms), or are there a range of other factors that are less empirically malleable that must be considered—culture, identity, and so forth? Are newer challenges to security a potential source of hostility between states such that current trends could be reversed? These are a few issues of concern to policy makers and those interested in international conflict and security that could be addressed. Putting these limitations aside, *The Puzzle of Peace* is a recommended read for those interested in the study of international peace as it

provides a useful analytic and conceptual tool to understanding state relationships in a more nuanced and relevant way.

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Securing the Peace: The Durable Settlement of Civil Wars by Monica Duffy Toft. Princeton University Press, 2010, 228 pp., \$23.07.

After the Cold War, civil wars went out of business. This was due to the West's loss of interest in supporting proxy wars against the defunct Soviet Union. At the same time, Roland Paris's assertion that "the perceived triumph of liberal market democracy as the prevailing standard of enlightened governance" increased the perceived geopolitical liability of allowing unchecked civil wars to continue. As a result, half the civil wars during the 1990s ended through negotiated settlements. Most memorable are the Dayton Accords that ended violence in Bosnia. Similarly, conflicts in South Africa, El Salvador, Nicaragua, Mozambique, East Timor, Guatemala, and Angola also concluded through negotiated settlements. It soon became conventional wisdom among statesmen that civil wars are solved most efficiently through negotiated settlements. Monica Duffy Toft argues differently.

In *Securing the Peace: The Durable Settlement of Civil Wars*, Toft opens the historical aperture beyond recent conclusions of internal conflicts and concludes that, while negotiated settlements have become popular because they are the quickest method of ending present bloodshed, negotiated settlements are also twice as likely to create future conflict. As a result of these reoccurring conflicts, negotiated settlements actually lead to greater casualties overall than a victory by either the government or rebels does.

Toft's bold assertion that negotiated settlements tend to increase long-term violence comes from a thorough analysis of 129 civil wars. Of these, 23 percent were terminated through negotiated settlements. One of several case studies Toft examines to test her hypothesis is the Salvadoran Civil War (1979–1992). As Toft admits, the negotiated settlement that ended this conflict was atypical because of the robust security-sector reform (SSR) it achieved. Typically military victories promote strong SSR due to the inherent capacity of the military to maintain security, whereas negotiated settlements leave the security sector "divided and therefore less capable of keeping the peace." The goal of any SSR is "the ability to maintain order through the use of force" and is achieved by restoring order, rebuilding security forces, and then creating institutions to monitor the emerging security apparatus. With the Salvadoran Civil War and its Chapultepec Peace Accords, 80 percent of the treaty was devoted to SSR, which subordinated the military to the government—a first for a Latin American military. Nevertheless, as Toft concludes, the content of the accord "was as much a consequence as a cause of the political will to avoid a return to civil war," as the conflict had convinced both sides that an outright victory was impossible. Regardless, negotiated settlements do not end most civil wars.

Of the 129 civil wars Toft analyzes, 70 percent ended with a victory by either the government or rebel forces. In these cases, Toft concludes that conflicts were less likely to recur. And while outright victory by one side may prevent more bloodshed in the long term, Toft highlights some significant costs to peace achieved in such a way. In cases when a government prevailed over rebels, long-term peace came at the cost of reduced political liberties afforded to the populace, as the previously challenged government views them with suspicion. Conversely, when rebels achieve victory over a government, they are automatically awarded "an advantage in terms of legitimacy," allowing these organizations to better implement SSR. While Toft does not go as far to correlate SSR with future democratization, she does provide evidence that rebel victories "perform better on average" with respect to a polity score than all the other types of civil war outcomes when measured 20 years after the conflict. In contrast, while negotiated settlements perform better than the rest within five years after the conflict, time quickly fades this temporary advantage.

The implications for Toft's thesis are as prescient as they are concerning. Contrary to prevailing diplomatic wisdom, Toft finds no evidence to suggest that third-party guarantees to a negotiated settlement have any positive effect on securing the peace. Citing two previous studies that demonstrated third-party guarantees had "little to no impact on the likelihood of successful settlement," Toft found that "third-party guarantees may actually increase the probability that war will recur."

Toft concludes with a look at the evolving situation in Iraq after the "Sunni Awakening." By taking the view held by others that Iraq had been experiencing a civil war since the Persian Gulf War in 1991, she considered the war to be temporarily suspended as the nation of Iraq was in fact operating as three demographically separate states. As her book went to press in 2010, Toft left two questions unanswered for Iraq's future: can the United States manage an effective withdrawal, and can the Iraqis maintain a unified state? Both of these questions have been answered temporarily in the negative by the rise of the Islamic State in Iraq and the Levant. This points to the problem that industrialized states' conventional capabilities "have become less potent against insurgents," and the subsequent increase in asymmetric battles. As a result, Toft agrees with Richard Falk that "non-intervention is intolerable, but intervention remains impossible."

Perhaps then, it should not be the responsibility of Toft to delve further into the present day implications of her theory. But lacking a suggestion other than warring sides and third-party entities should develop a "hybrid settlement design capable of leveraging the strengths of each termination type," Toft leaves the reader struggling to wonder if this theory is only good for determining what has happened and not how to shape what will occur. Even so, *Securing the Peace* is a beneficial study for all interested in civil war outcomes, whether they be individuals at influential levels of government determining a proper course of action in a civil war or voters pondering whether it is wise to ask their elected leaders to intervene in a nascent civil war raged abroad.

Capt Eric N. Ringelstetter, USAF

Nuclear Strategy in the Modern Era: Regional Powers and International Conflict by Vipin Narang. Princeton University Press, 2014, 360 pp. \$25.42.

As the US Air Force (USAF) continues to strengthen its nuclear deterrent capabilities, one of the more challenging tasks is to understand the nature of deterrence in today's post-Cold War environment. In general, there has been insufficient attention posed to the question of how regional nuclear powers, with more limited nuclear arsenals and lacking global ambitions, intend to use their nuclear weapons. The focus has traditionally been on how states gained their nuclear weapons or what types of nuclear weapons they have developed—but not to what purpose. We cannot afford to mirror-image old notions of strategic deterrence to guide our views on these new nuclear weapon states.

In *Nuclear Strategy in the Modern Era*, Vipin Narang seeks to develop an analytical framework that helps to explain why regional nuclear states have adopted particular nuclear postures in light of their security environment. He offers an “optimization theory” with several “yes/no” gates that guide one to assess what nuclear posture a regional power should have adopted and, to test his framework, compares that assessment to what those states actually have demonstrated. He also considers structural realism, technological determinism, and strategic culture as other potential indicators of a state's nuclear posture. This sounds simple in theory, but it is difficult to prove in practice. He applies his framework to Israel, South Africa, India, China, Pakistan, and France, and postulates how North Korea and Iran might develop their nuclear postures—assuming they become functional nuclear weapon states.

Based on the results of the optimization theory, Narang suggests that regional nuclear weapon states might use nuclear weapons as a catalyst for involving major powers in regional conflicts, as an escalation in response to conventional warfare threatening the nation, or as assured retaliation against an adversarial nuclear strike. It may be that a nation starts out in one category, and as its nuclear weapons program matures and its security conditions change, the planned use of its nuclear weapons changes as well. What becomes most interesting in Narang's discussion is whether nuclear deterrence works in preventing conventional warfare, as has been traditionally assumed for decades. His discussion on the relationship between conventional and nuclear conflict is particularly fascinating and relevant.

Narang has done an impressive amount of research in this book. He dedicates a heavily footnoted chapter to talk about each of the regional powers—describing not just the nuclear weapons programs of each nation but also the plans and decisions made by the respective national authorities. Each chapter could stand alone as a well-researched case study. With authority, he discusses the conventional conflicts between nuclear weapons states and why those states did not go nuclear. The book is very strong in its review of individual regional powers' motivations and development efforts, and the author's optimization theory is simple enough to understand at a glance, while encouraging the reader to continue through the chapters to see if the theory stands up. To his credit, Narang acknowledges that the theory is not perfect. His theory suggests that Israel's nuclear posture following the end of the Cold War should be asymmetric

escalation, when in practice, it appears that Israel prefers assured retaliation today. Still, his theory stands up much better than realist theory, technological determinism, or strategic culture.

The book can be heavy on statistical analysis at times; the statistics are necessary to test and evaluate the optimization theory, but may be boring to the general military student. In addition, Narang has a habit of repeating some assumptions and findings in the same chapter, almost as if it were a mental foot-stomp to remind the reader of the parameters of each case study. He does not offer any discussion as to the nuclear posture of the United States or Russia, and to be fair, the optimization theory is clearly designed for regional powers. However, one has to wonder whether aspects of this theory could be expanded to discuss the changing nuclear posture of the superpowers over time.

Overall, this book presents a unique and challenging perspective that helps explain how—not why—regional powers develop their nuclear postures to be used in contemporary national security scenarios. As the US military engages these nations during international security crises, it behooves us to better understand these nations' perspective on nuclear weapons postures. Both scholars and general military readers will find much to think about in these pages, and the book breaks ground in a particularly important area to the USAF in particular.

Al Mauroni

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Worthy Fights: A Memoir of Leadership in War and Peace, Leon Panetta.
Penguin Press, 2014, 467 pp., \$36.00.

Leon Panetta's autobiography, *Worthy Fights*, is not a work of strategy or a "tell-all" inside look at the seats of power in the United States. Instead, this is a book about patriotism, idealism, and gratitude—a theme the author returns to throughout. Panetta credits his love of country to his parents, who immigrated to the United States in the early twentieth century. Like so many other immigrants of their day, they worked hard and took advantage of opportunities offered by their adopted nation to eventually live the American dream. For young Leon, even discrimination and recrimination toward US citizens during World War II could not alter his feelings of gratitude as a first-generation American and his appreciation of the inherited dream. His life story is a mixture of religion, duty, service, colorful language, and, of course, politics. Indeed, one-half of the tome encompassing most of his life is devoted to politics, elections, Congress, and service as a cabinet member and political insider prior to becoming director of the Central Intelligence Agency (CIA) and then Secretary of Defense. Panetta uses this "political" part of the book to highlight lessons learned along the way. For example, early in his career he most admired those politicians who exhibited a sense of obligation to the nation—those who were worthy of admiration and voted on principle regardless of the consequences. He insisted that integrity mattered more than political survival, while cultivating relations with power brokers without sacrificing ethics. Panetta offers several recommendations for leaders, including not vacillating

on decisions, building relationships, being philosophically consistent, persevering, not despairing, speaking directly to the people, remembering loyal supporters, resting, and being on time. Toward the US Congress today, he laments the cynicism, partisanship, inaction, and lack of compromise. He states, "Congress does not handle complexity well," and Panetta uses the fight over health care reform as an example. This fight, along with many others, plays to the book's title, as Panetta describes many fights along the way, including those with early opponents: Richard Nixon, Newt Gingrich, and Dennis Blair.

For many readers, the second part of the book will be much more interesting, as it covers the details of Panetta's time as CIA director and Secretary of Defense. It is interesting to note, for both these jobs, Panetta initially questioned whether he was the correct choice to fill the role. In the case of the CIA, he offers advice to those who consider themselves an outsider upon assuming the lead role in such an organization: listen to your predecessor, hold on to some key staff, approve those who will join you, involve key staff in decisions, keep a schedule, fight for your organization, be respectful of power but not subservient to it, and tell it like it is.

The three chapters concerning finding and killing Osama bin Laden show the level of planning and depth of trust developed by his CIA colleagues. Most readers will find this insight very helpful in understanding how Panetta was able to manage such a complex operation without compromising security. His performance in the CIA role was indeed impressive, especially as a non-CIA veteran. As for his role as Secretary of Defense, the book largely devolves into a list of anecdotes, seemingly without any organization. It is as if these were taken from his trip schedule or meeting calendar: Pakistan, Egypt, Saudi Arabia; sequestration; Anwar al-Awlaki; drones; and NATO's Libyan campaign. The best part of his defense role is how he agonized over having to make tough decisions sending military forces into harm's way and having to deal with casualties. Just as his predecessor had admitted wanting to leave the defense role because of this strain, one gets the impression Panetta suffered the same feelings.

Worthy Fights is not without shortcomings. In fact some of Panetta's early philosophy on leadership seems contradictory. For instance, he professed a desire to "join a politician who espoused my values" in deciding to work for certain leaders. He also touted how he refused to accept casual misconduct and an unwillingness of politicians to sanction leaders or to hold them accountable. Yet at the same time, he admits being baffled by Pres. Bill Clinton's impeachment over the Monica Lewinsky affair. He failed to reconcile those values with accusations of Clinton's Jennifer Flowers's story, marijuana use, and avoidance of the draft. Instead, in the same paragraph, Panetta stated how he admired Clinton's perseverance. During the Watergate scandal, Panetta railed against those inside the Richard Nixon administration who would not enforce the law, but there is no mention of the lack of enforcement of current US immigration laws. Similarly, he emphatically declares that the military should not risk its capacity to fight just to become an instrument of social progress but at the same took pride in ending the controversial "Don't Ask, Don't Tell" policy. Panetta was correct in one regard: the key to US power is our values, but the affect on our values from some of the "social experiments" conducted during his tenure are not yet known. The former Secretary

also stated with regard to General David Petraeus that no laws were broken as a result of the general's sexual affair, but we have since learned Petraeus had in fact leaked classified information and pleaded guilty to the offense.

In the end, Panetta returns to the familiar theme of patriotism, and despite the shortcomings mentioned above, it is a welcomed message. He beseeches young people to not give up on government or lose faith in its leaders. For according to Panetta, giving up on government is tantamount to giving up on democracy itself. One would be hard pressed to find an autobiography more humble, more sincere, and more genuine than *Worthy Fights*. Leon Panetta has lived the American dream and served his country, enduring family strain that was the cost of his success. The challenge of his message becomes a question: how will US democracy survive if we have no first-generation Americans or any others who are instilled with the same sense of gratitude toward country to guide their motives for the benefit of citizens?

W. Michael Guillot, USAF, Retired

Is the American Century Over? by Joseph S. Nye, Jr. Polity Press, 2015, 146 pp., \$10.00.

Few if any authors in the United States are as qualified as Joseph Nye to ask such a question, "Is the American Century Over?" Even fewer could provide such a reasonable answer. One reason for this sentiment is, as Nye himself admits, "I have lived through the American century." Indeed he has—and not simply as a witness to it but as one who shaped it. For such a short work, Nye is able to very succinctly present his case that the American century is not over and may exist for decades into the future. He argues the term *decline* has become almost meaningless and somewhat dangerous in a geopolitical context. Likewise, describing the United States as ever being a world hegemon overstates the case of American power. For those looking to narrow the chronology of what could be considered the American century, Nye suggests that it began in 1941 and thus leads one to wonder: will the United States maintain primacy in global affairs in 2041? The key to understanding the concept rests with the ability to think about America's position in the world in relative terms. As Nye puts it, the keys is to think about relative decline rather than absolute decline as most critics are apt to do. He clarifies the concept even further by considering decline in two ways: external power and domestic decay. The first is relative to others in the international system; the other represents a lack of internal ability to convert resources into power.

The book presents a number of strengths to support the case for continued American preeminence into the future. Among them are the strength of alliances and the low probability of balancing alliances against the United States, demographics that illustrate positive trends in the United States and negative trends in most competitors, economy and productivity, military power, and technological innovation. Using the above criteria, Nye compares the United States against six countries (groups): Europe, Japan, Brazil, India, Russia, and China. The analysis is concise and convincing that the American century is anything but over.

Of course Nye also mentions those areas that could most affect decline and hasten the end of the American century including mismanagement of the economy, education-competitiveness, and political-social-cultural institutions. Here Nye reverts to his concept of soft power to foresee how internal decline is the most threatening force against the American century. He reserves his toughest critique for the US political system and the US Congress that has devolved into legislating foreign and economic policy based on pressure from self-serving economic and ethnic pressure groups. The outcome is a lack of power conversion—a failure of the United States to translate power into effective influence.

Nye also discusses the two great power shifts he sees occurring: power transition and power diffusion. He sees power transitioning from Western states to Eastern states indicative in the “rise of the rest.” More importantly, he sees a great diffusion of power brought on by the explosion of information technology. This development creates greater complexity and will make it harder for any nation to wield power and control the global environment.

In the end, Nye concludes the American century may indeed be shortened by accident, miscalculation, or poor human choices. However, he appears confident the challenges of the future are not unsolvable—as long as the United States works with others and seeks to gain greater efficiency in power conversion. In Nye’s view, the duration of the American century will depend on adjusting strategic goals and, most of all, continued American leadership. There is much to like in this short work and nothing to criticize. It will be thought-provoking reading for senior civilian and military leaders or those who may question the future of American global leadership.

W. Michael Guillot, USAF, Retired

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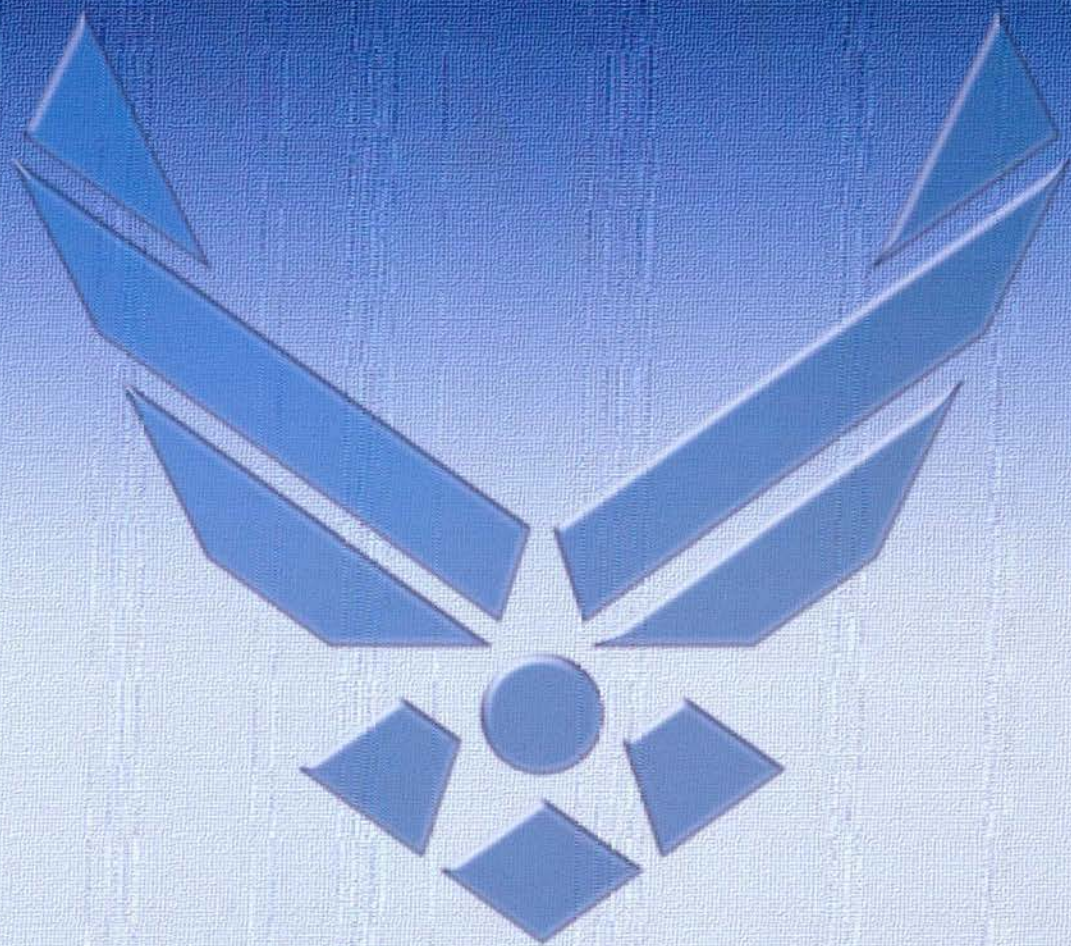
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